

# IOWA STATE UNIVERSITY

## Digital Repository

---

Sustainable Corn: Reports to Funding Agency  
(USDA-NIFA) via REEport

Cropping Systems Coordinated Agricultural Project  
(CSCAP): Climate Change, Mitigation, and  
Adaptation in Corn-based Cropping Systems

---

2015

## Sustainable Corn CAP (USDA-NIFA Award No. 2011-68002-30190) Year 4 REEport

Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems

Follow this and additional works at: [http://lib.dr.iastate.edu/sustainablecorn\\_agencyreports](http://lib.dr.iastate.edu/sustainablecorn_agencyreports)

---

### Recommended Citation

Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems, "Sustainable Corn CAP (USDA-NIFA Award No. 2011-68002-30190) Year 4 REEport" (2015). *Sustainable Corn: Reports to Funding Agency (USDA-NIFA) via REEport*. 3.  
[http://lib.dr.iastate.edu/sustainablecorn\\_agencyreports/3](http://lib.dr.iastate.edu/sustainablecorn_agencyreports/3)

This Report is brought to you for free and open access by the Cropping Systems Coordinated Agricultural Project (CSCAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems at Iowa State University Digital Repository. It has been accepted for inclusion in Sustainable Corn: Reports to Funding Agency (USDA-NIFA) via REEport by an authorized administrator of Iowa State University Digital Repository. For more information, please contact [digirep@iastate.edu](mailto:digirep@iastate.edu).

|                                    |  |                                  |            |
|------------------------------------|--|----------------------------------|------------|
| <b>Title:</b>                      | <b>Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems</b> |                                  |            |
| <b>Sponsoring Agency</b>           | NIFA   | <b>Project Status</b>            | CHANGED    |
| <b>Funding Source</b>              | Non Formula  | <b>Reporting Frequency</b>       | Annual     |
| <b>Accession No.</b>               | 224740   | <b>Grants.gov No.</b>            |            |
| <b>Project No.</b>                 | IOW05290   | <b>Proposal No.</b>              | 2010-04400 |
| <b>Project Start Date</b>          | 03/01/2011   | <b>Project End Date</b>          | 02/28/2015 |
| <b>Reporting Period Start Date</b> | 02/28/2014   | <b>Reporting Period End Date</b> | 02/27/2015 |
| <b>Submitted By</b>                |  | <b>Date Submitted to NIFA</b>    |            |

**Program Code:** A3101

**Program Name:** Climate Change: Regional Approaches to

**Project Director**

Lois Morton

515-294-2843

lwmorton@iastate.edu

**Recipient Organization**

IOWA STATE UNIVERSITY OF SCIENCE AND  
1350 BEARDSHEAR HALL

Ames, IA 500112025

DUNS No. 005309844

**Performing Department**

Sociology

**Co-Project Directors**

Sawyer, John

Kladivko, Eileen

Arritt, Raymond

Lal, Rattan

O'Neal, Matthew

Scharf, Peter

Cruse, Richard

Dick, Warren

Nkongolo, Nsalambi

Tyndall, John

Helmets, Matthew

Gassman, Philip

Bowling, Laura

Lekies, Kristi

Gassmann, Aaron

Owens, Phillip

Anex, Robert

Mueller, Daren

Todey, Dennis

Arbuckle, J.

Villamil, Maria

Castellano, Michael

Miguez, Fernando

Nafziger, Emerson

Lauer, Joseph

**Departments**

Dept. of Agronomy

Agronomy Department

Agronomy

Environ and Natural Resources

Entomology

Division of Plant Sciences

Sch of environ & Natural res

Agriculture and Env Science

Dept. of Natural Resource Ecology &  
Management

Dept. of Agricultural and Biosystems  
Engineering

Department of Economics

4-H Youth Development

{NO DATA ENTERED}

Biological Systems Engineering

Plant Pathology & Microbiology

Agricultural Biosystems Eng

Sociology

Crop Sciences

Crop and Soil Sciences

Economics

Geological Sciences

Agricultural Education & Studi

SW Research and Outreach Cente

Human and Comm Res Dev

Kravchenko, Sasha  
Kling, Catherine  
Basso, Bruno  
Abendroth, Lori  
Benning, Jamie  
Herzmann, Daryl  
Ingels, Chad  
Miller, William  
Strock, Jeff  
Moore, Richard  
Frankenberger, Jane  
Fausey, Norman

Agriculture and Bio Engineerin  
Columbus, Ohio

### Non-Technical Summary

The United States has a social and economic corn-based system that supports the very successful production of food, fuel, and fiber. However, this system imposes a number of unintended environmental consequences, among them contributions to hypoxia in the Gulf of Mexico and production of greenhouse gases (GHGs). Increased climate uncertainty and change are likely to exacerbate environmental impacts and threaten long-term sustainability and resilience unless mitigation and adaptive strategies are identified and implemented. More than 1/3 of the North Central Region farms produced corn in 2007 on over 76.3 million acres, with nearly half of these acres tile drained. Our collective Land Grant Universities and the Agricultural Research Service Centers have a several decades-long and productive history of studying soil and agronomic processes by monitoring and experimenting with interactions between nitrogen (N) and plant growth, N loss and water fluxes, soil organic carbon (C) storage in relation to soil quality and crop yields, and tillage systems as best management practices for N loss, C storage contributions and water flux, and soil and soil organic C loss. Despite this scientific legacy, gaps remain in this body of work, particularly with respect to climate variation and climate extremes. This project addresses the fragmented research on corn-based systems by uniquely integrating individual, discipline-based findings into a trans-disciplinary and multi-state functional network that connects current and future scientists, farmers, educators, and extension specialists and facilitates learning and exchange of expert and local knowledge. A team from 12 institutions across nine states will address these gaps and the agronomic and societal challenge to mitigate and adapt the North Central corn-based cropping system to climate change. The vision is to create a coordinated functional network to develop science-based knowledge on climate mitigation and adaptation that informs policy development and guides on-farm, watershed level, and public decision making. Standardized protocols and a network of 21 carefully selected sites will be used to provide baseline measurements on GHGs, C, N, and water usage data and to evaluate a suite of crop management practices. These practices include tillage, cover crops, crop rotations, drainage water management, and enhanced N management techniques. Data from these sites will be archived in a central database and used in conjunction with public climate data. Physical, climate, sociological, and economic models will be applied in an iterative way to establish strengths and weaknesses of a set of cropping practices. Life cycle analyses, social, and economic findings will be used to develop public policy recommendations and engage producers and stakeholders in managing for climate uncertainty and environmental sustainability. This project integrates research, extension, and education; builds capacity for extension to address climate change needs of stakeholders; and prepares the next generation of scientists for interdisciplinary research on the intersection of agriculture and climate.

### Accomplishments

#### Major goals of the project

Despite a long and productive history of studying soil and agronomic processes by many research institutions, gaps in knowledge exist with respect to climate variation and extremes. These gaps include knowledge about coupled cycling of carbon (C), nitrogen (N), and water; the effects on C, N, and water fluxes of corn systems management practices; and the willingness of the agricultural community to adopt practices to manage risk and enhance long-term sustainability. This project addresses these gaps and builds a framework for science-based policy and decision making through five long-term objectives. (1) Develop standardized methodologies for estimating C, N, and water footprints of corn production in the North Central region and perform baseline monitoring. Soil quality, C sequestration, greenhouse gases (GHGs), inorganic N, and soil water will be measured and correlated with agronomic indicators for sites across the region. A set of codified protocols will be developed and personnel will be trained to gather accurate and comparable data. These data will be archived in a publicly available database. (2) Perform field tests across 21 baseline sites in eight states to evaluate the impacts of a suite of crop management practices on C, N, and water footprints. Measurements from control plots will be compared to plots employing a suite of practices that have promise in reducing GHGs and N in tile flow and potential acceptability to farmers. Practices include no-till, extended crop rotations, drainage water management, cover crops, and canopy N-sensors. Data will be

archived in the database. (3) Apply climate and physical models to synthesize results from the field tests and extend them to predict climate and economic scenarios. These include DAYCENT for coupling crop and climate models, the Soil Landscape Interface Model for extending results to farm scale, and SWAT to extend these models to the watershed level and incorporate economic land-use models with physical and climate models. (4) Perform comprehensive life cycle analyses of proposed practices and evaluate the socio-economic-environmental willingness of producers to adopt new cropping systems through feedback loops between social science research, biophysical field research, monitoring, and modeling of production systems. (5) Integrate education, extension, outreach, and stakeholder participation across all aspects of the program, focusing on place-based education and outreach programs. Farmers will participate via I-FARM, an interactive tool to analyze the economic, agronomic, and social acceptability of the practices. These objectives will build a high-functioning, regionally coordinated network of science-based research, extension, and education that will inform decision and policy making. Outputs will include codified standard protocols for data collection and researchers trained in these methodologies; regional data and information for stakeholders; integration of farmer knowledge and experience with research knowledge to guide future research; trained students, teachers, and extension educators; peer-to-peer farmer watershed groups; and Extension and peer-reviewed publications.

### What was accomplished under these goals?

There are a number of high profile outcomes and impacts from Y4 for the whole team as well as individual Objectives. The Resilient Agriculture National Conference held August 5-7, 2014 in Ames, IA drew 189 people including producers, farm leaders and agricultural organizations and was streamed to 70 online attendees. This national conference showcased: 1) many project science findings to-date; 2) engagement of project farmers in the applications of the science; 3) strong partnerships built with the 25x25 Alliance and the USDA U2U project; and, 4) project team engagement with knowledge exchanges among disciplines and stakeholders to address weather and climate challenges associated with corn-based cropping system management. A 48-page color magazine was published for the national conference with the farmer audience in mind; it highlighted project findings and was awarded for excellence by the American Society of Agronomy. A project-wide effort was the publication of key research in the Journal of Soil and Water Conservation (JSWC) Nov.-Dec. 2014 issue on Climate and Agriculture at <http://www.jswnonline.org/>. Two years in the making, 14 of the 20 articles were authored all or in part by CSCAP researchers and graduate students. Collaborative research clusters and subgroups have worked more effectively together in Y4 on a cross-disciplinary and regional basis to analyze data and increase development of joint publication as result of increased understanding of diverse disciplinary perspectives and stronger trust relationships. Members have increased their comfort in communicating across disciplines and actively exchanging knowledge and generating new ideas to guide hypothesis testing and interpretation of findings. One outcome from the training of students has been the publication of 19 journal articles they have authored/co-authored to-date. The systems science focus and cross-disciplinary opportunities to learn continues to attract talented young people into the team, and to agricultural-based sciences. At this time, all Year 4 milestones are completed, although some have shifted in terms of focus or scale as the team continues to build out in many areas well beyond these milestones.

Further accomplishments are listed by Objective:

Obj 1 & 2:

1. Continuation of the team's research network of 35 sites that is being leveraged for additional funds and research beyond the original scope of CSCAP and is used to drive scientific and lay publications;
2. Continued development of graduate student capacity in conducting field research and a knowledge of protocol methods and collection of data beyond their specific discipline;
3. Working groups were formed with many of them highly functioning and well prepared to undertake the synthesis and analysis of data across time and space;
4. Greater appreciation for the modeling and synthesis ability of Obj 3 personnel based on working group discussions and products;
5. Sharing of findings to the entire team to aid comprehension and knowledge of C, N, and water responses to the treatments being investigated; and
6. Dissemination of research through papers in journals, presentations, and the media to build scientific knowledge of the capacity these treatments have for adaptation and mitigation.

Obj 3:

1. Interactions with the central database and data owners in use of primary data, interpretation, and co-authorship;
2. Supporting and continuing to build consistency among Obj. 1 & 2 members in their familiarity and ease of data entry with an overall high level of comfort and ability attained. Data reviews summarizing data entered/missing for each subcontract were conducted and this further built the relationships between the Objectives;
3. Continued development of graduate student capacity in data synthesis and modeling with connections to field research that go beyond their specific discipline;
4. The Obj. 3 team has been building collaborations with other Objective teams as well as among the modeling teams. For example, SALUS and DAYCENT are being used in tandem with SALUS predicting impacts of climate variability on corn yield

and these yield changes allowing for more accurate predictions of soil N<sub>2</sub>O emissions;

5. Dissemination of research through papers in refereed journals, presentations, and the media to build scientific knowledge of the effectiveness of these treatments in providing climate adaptation and mitigation; and,

6. Continuing to build partnerships beyond the CSCAP to connect with data sources and model developers

Obj 4:

1. Publication of the "Farmer Perspectives on Agriculture and Weather Variability in the Corn Belt: A Statistical Atlas" presenting data from the survey of 4,778 farmers across 11 states and 22 HUC6 watersheds in tabular and map form. This major product of a dynamic partnership with the Purdue-led USDA grant "Useful to Usable" (U2U) and the National Agricultural Statistics Service (NASS) was downloaded 11,399 times in 2014;

2. Dissemination of findings to key stakeholders and policy makers with several presentations to USDA administrators in the OSEC, NRCS, ARS, and FSA offices; these helped to guide language used by the Secretary of Agriculture in discussing climate change and framing the newly developing Climate Hubs. The scientific process and methods used in the survey have informed other farmer surveys throughout the US;

3. Establishment of transdisciplinary research and extension partnerships across the CSCAP Objectives and incorporation of farmer survey data and in-person interview qualitative data to guide and interpret Obj 3 watershed modeling efforts; and

4. Increased capacity among extension educators to translate climate and agriculture science to farmers by focusing on key adaptive strategies and concerns revealed through survey and interviews.

Obj 5:

1. Extension educators in all CSCAP states incorporated climate and agriculture presentations, information, and discussions into their existing extension programming efforts and reached over 7000 farmers, crop consultants, and other extension educators,

2. Several extension educators have been able to step in to state-based information needs because of their knowledge through and experience with the CSCAP,

3. Garnering widespread support in the team's efforts to programmatically strengthen the Land Grant University's focus on climate education for agriculture represents a significant shift relative to past efforts. Educators in IN and MI have conducted extension in-service this past year to address this need, and

4. Partnership with the U2U project continued with promotion of U2U tools facilitated by CSCAP extension educators in extension presentations, newsletters, one-on-one conversations, and at the national conference.

Obj 6:

1. Graduate student involvement in research, extension and education efforts of the team are helping to shape them into the next generation of climate and agricultural scientists and educators. Currently, we have 47 graduate students. Many new graduate students recently joined the team and are being trained by individual PI's.

2. Graduate students are highly engaged in team activities and presenting their work to external audiences. There was high student participation at the national conference with 71% of the team posters presented by graduate students. Students also are actively attending and presenting at professional society meetings.

3. The web-based graduate seminar titled "The Science behind Climate Change" provided an opportunity for the students to learn about various sciences as they relate to climate change.

4. CSCAP climate camps for science and agriculture teachers were hosted in IA, MN, and OH.

5. The appointment of our third graduate student representative to the Leadership Team continues two-way communication between the graduate students and the leadership team.

### **What opportunities for training and professional development has the project provided?**

In Years 1-3, we have had annual (internal) team meetings but this year we hosted a three-day national conference in Ames, IA with our team members, farmers, and external partners in attendance for cross-learning and dialogue. Graduate students participated in a "Next Generation Scientist" dinner at the national conference along with the "Next Generation Farmers" in attendance to allow for mutual learning and network building. In addition, 4 times during the year, Objective based working sessions occurred in-person to advance papers, outputs, and strategic plans. The groups included: cover crop working group, drainage water management working group, Obj. 3, and Obj. 5. All Objectives meet throughout the year virtually using web teleconferencing.

The CSCAP team includes a diverse set of expertise and specialties across the faculty, postdoctoral researchers, topic-based specialists/technical staff, graduate students, and undergraduate students. The CSCAP team is also actively engaged in helping train students within STEM disciplines. To-date, a total of 103 undergraduate students, 83 graduate students, and 18 postdoctoral researchers are members of this team; this equates to a total of 2708 months for this cohort of next generation scientists involved with the CSCAP. Our team's current Y4 contingent includes 46 graduate students and 10 post-doctoral scientists. Over the past three and a half years, our team has included a total of 83 graduate students (30% minority and 46% women) and 18 post-doctoral scientists (72% minority and 17% women). Undergraduate interns (n=10) at Iowa State University and The Ohio State University were engaged in team research with their mentors and presenting their findings.

Undergraduate research assistants (n=41) across CSCAP institutions were also involved in research such as in-field data collection and conducting of lab procedures. A total of 51 undergraduate students were involved in the CSCAP in Y4. Gabrielle Roesch-McNally, elected graduate student representative for Y4 and member of the Leadership Team, is working to connect graduate students to the opportunities within the CSCAP graduate student body and facilitate transdisciplinary engagement as possible. Graduate students continue to do outstanding work and are active, contributing members of the team as well as represent our team in professional meetings and USDA functions such as the Project Director meeting in Jan. 2014 where Andrea Basche (Iowa State University) and Lindsay Pease (The Ohio State University) attended and were part of the graduate student breakout and Gabrielle Roesch-McNally (Iowa State University) and Chris Eidson (The Ohio State University) were invited to attend the PINEMAP summer meeting and participate in the graduate student discussions. At our 2014 national conference, graduate student posters were part of a competition with the top 3 awarded for excellence: 1<sup>st</sup>: Maciej Kazula (University of Wisconsin), 2<sup>nd</sup>: Linda Geiger (Iowa State University), and 3<sup>rd</sup>: Lindsay (Kilpatrick) Pease (The Ohio State University). A cohort of our graduate students also authored a paper for the special issue of the JSWC highlighting what their experience has been in this project. Graduate students have been involved in the successful publication of 19 journal articles which they have authored/co-authored to-date.

The Y4 web-based graduate spring seminar titled "The Science behind Climate Change" highlighted three external and three internal faculty members. The weekly average attendance was 20 graduate students and staff; participants rated the webinars highly.

#### **How have the results been disseminated to communities of interest?**

The team has been productive again with a total of 59 refereed journals\*, 5 project reports or promotional pieces\*, 5 white papers\*, 5 MS thesis\*, 3 PhD dissertations\*, 13 proposals\*, 7 books or book chapter, 26 extension publications\*, 152 conference presentations (92/152 entered into REEport)\*, 149 extension presentations, 13 education webinars\*, 3 education camps\*, 4 websites\*, 10 partnerships with external groups\*, 23 blog entries\*, 97 popular press pieces (such as Corn and Soybean Digest and Successful Farming)\*, 28 University press\*, 7 radio and TV spots\*, 27 videos\*, and 9 news releases\*. Please note that output categories with an asterisk have been brought into the Outputs section of this REEport but due to system capability the remaining outputs could not be uploaded. These outputs are in addition to those already reported in previous reports for Years 1-3.

The team website ([www.sustainablecorn.org](http://www.sustainablecorn.org)) has seen an increase in traffic; site usage statistics from Oct. 2013 through Sept. 2014 include 14,175 site visits (53% increase from last year), 7,161 unique visitors (74% increase), 36,602 page views (37% increase). The most visited pages include the AgriClimate Connection blog, field research, and farmer perspectives about agriculture and weather variability.

Efforts to increase communications in Y4 with key external target audiences also include the following:

- Ongoing blogposts made weekly on current topics through partnership with U2U.
- A 48-page magazine was created containing 21 illustrated articles by our team members (Appendix G). It highlighted the science behind climate resilience strategies for corn-based cropping systems and featured some of the team's research findings to-date. A total of 320 print copies have been distributed to-date to farmers and crop advisors. The magazine continues to be available electronically on our public website.
- A video entitled, Views from the Field: Farmers on Changing Weather Patterns, was collaboratively created by the team's videography student intern and extension educators. It debuted at the conference and is available at [youtube.com/sustainablecorn](http://youtube.com/sustainablecorn).
- News releases were sent out to highlight the statistical atlas by Obj. 4 and to tie the team's work in with nationally covered topics such as the release of the Third National Climate Assessment.

The 2014 national conference for Corn Belt farmers, crop advisors and CSCAP team members was promoted via news releases to ~400 local and national farm press, team website, blog, Twitter, postcards, ag and crop newsletters at partner universities, and outreach to corn and soybean farmer organizations through our relationships and our co-host 25x25 Alliance. The CSCAP project and the science of crop resilience were carried in popular press publications such as Wallace's Farmer, Successful Farming Magazine and the Farm Bureau Spokesman. All conference products are available at [www.sustainablecorn.org](http://www.sustainablecorn.org), including the magazine, conference sessions on video, Sec. Vilsack's comments on video, and

#### **What do you plan to do during the next reporting period to accomplish the goals?**

The Climate and Corn-based Cropping Systems Coordinated Agricultural Project (CSCAP) is entering Y5 with goals to: 1) complete sampling measurements at 35 field sites and enter all data (biophysical and social economic) into the database; 2) accelerate synthesis and modeling of primary and secondary data and publish findings in scientific outlets; 3) increase cross-disciplinary integration and knowledge exchanges of data and findings to address more complex human-natural system research questions; 4) develop recommendations and extend scientific findings to extension educators, farmers, policymakers, agricultural sector, and science educators with whom the team is working; and, 5) complete the graduate education of 47 project students and guide them into the next phases of their careers. In this last year of the project, the team will work to ensure future science and outreach programming are poised to build on what the project has learned by strengthening existing while also building out new partnerships to leverage and transfer the work of the team such as standardized protocols, research and management databases, internal website, field experiments, and inter-transdisciplinary

networks of value to future proposals and projects. Many Advisory Board members are highly engaged with the team and are working with the team to plan for sustaining the project legacy.

Across-team Y5 integration goals are to: 1) accelerate synthesis and modeling of primary and secondary data and publish findings in scientific outlets; 2) increase across-disciplinary integration and knowledge exchanges of data and findings to address more complex human-natural system research questions; and, 3) develop recommendations and move scientific findings to applications for use by extension educators, farmers, policymakers, other groups in the agricultural sector, as well as science educators.

To accomplish the Y5 project goals we will continue the successful processes from past years that are bearing fruit and push forward to complete collection of all primary data (biophysical and social economic) with intent to finalize the project database; intensify cross-disciplinary efforts to conduct primary and regional analyses, synthesis, and modeling; and publish the science of the team for scientific and non-scientific audiences.

Y5 whole-team POW tasks are:

- a) Complete the project database. Objectives 1-4 tasked with collecting, cleaning and preparing project primary data for analysis will actively interface with the database team to assure all data are in the database by end of Y5;
- b) Identify point persons for Objectives and field treatment workgroups to accelerate integration of disciplinary knowledge, theories, data and findings within Objectives and across the team so as to push multi-disciplinary integration and to facilitate across team knowledge exchanges;
- c) Strengthen integration by utilizing whole team monthly/bimonthly meetings to present preliminary findings and plans for writing papers, to identify integration and cross-cutting themes, and to organize integrated synthesis-writing workgroups;
- d) Increase virtual and face-to-face time for integrated team clusters to accelerate exchange of theories, propose and test hypotheses, analyze and synthesize data, and publish science findings;
- e) Expand involvement of project extension educators into existing and new integrated team clusters to create more active feedback loops between research, extension, and education so that scientific findings have strong farmer applicability;
- f) Develop products for non-scientific audiences by communicating key scientific findings to extension and education so these science outputs become inputs that extension and education teams can use with their target audiences;
- g) Synthesize regional recommendations specific to experimental treatments (cover crops, drainage management, tillage, extended rotations, and N management, organic water use efficiency);
- h) Publish regional recommendations via methods that target extension educators, agricultural advisors and intermediaries, farm media, science teachers, and project website visitors; and,
- i) Develop workgroups and work closely with the CSCAP Advisory Board to explore mechanisms and partnerships to leverage and transfer the work of the team post-project (e.g., Midwest Climate Hub, North Central Region Experiment Station directors, NA Climate Smart Agriculture, industry-university-ARS consortia).

The Y5 plan of work for Objectives 1 & 2 focuses on building upon prior years collaborative work within topic subgroups (cover crops, drainage water management, organic systems, tillage management, nitrogen management, extended rotations, and integrated pest management), the final year collection of field research data across the 35 CSCAP research network sites, transmittal of data into the central database, integration meetings with Objective 3-6 members, and preparation of regional publications synthesizing data across the CSCAP network.

The Y5 plan of work for Obj. 3 includes ongoing synthesis and modeling of CSCAP data gathered during Y1-Y4, continued collaborative work among subgroups, improved functionality and support of the central database, and integrating socioeconomic and climate data into datasets for modeling and analysis.

The Y5 plan of work for Obj. 4 centers on continued (1) analysis of the quantitative and qualitative data that were collected in Y1-3, and (2) dissemination of that information, especially through the CSCAP Obj. 5 extension network. The close partnership with USDA U2U (Useful to Useable) project will continue with analyses and publications from the Obj. 4 shared database. Analysis and reporting will lead to improved understanding of farmer perspectives on climate change and adaptive and mitigative action; dissemination of that information to inform the work of scientists, natural resource and agricultural professionals, and policy makers; strengthening the transdisciplinary linkages with other project Objectives; and, continuation of learning partnerships with extension educators and farmers in nine Corn Belt states.

The Y5 plan of work for Obj. 5 includes continuing work with farmer groups, one-on-one discussions with farmers' about their production systems, state-specific field days and crop management meetings to convey science findings and recommendations to assist in establishing practices for adaptation to climate change and facilitated discussions on weather variability and agriculture. As part of the accelerated integration goal of Y5, extension educators have been asked to become more actively involved in output development themselves and to integrate with project work clusters to provide feedback to the development of regional recommendations to farmers and interpretation of findings for non-scientific audiences.

The Y5 plan of work for Obj. 6 is shaped around five key areas: (1) translate the science on climate change and agriculture (from this project and others) into educational materials for targeted stakeholder groups, (2) awaken and inspire the next generations of scientists and agricultural professionals to "do" agricultural science, (3) synergize and catalyze impacts and accomplish more than the sum of outcomes from Objectives 1-5, (4) integrate and cycle educational outcomes generated by the respective Objectives back to transform the project, and (5) target the dissemination of the science, research, processes, results, and implications to priority audiences of the project: graduate students, undergraduate students, and high school science and agriculture teachers.

**Participants****Actual FTE's for this Reporting Period**

| Role           | Non-Students or faculty | Students with Staffing Roles |          |                | Computed Total by Role |
|----------------|-------------------------|------------------------------|----------|----------------|------------------------|
|                |                         | Undergraduate                | Graduate | Post-Doctorate |                        |
| Scientist      | 3.3                     | 0                            | 0        | 0              | 3.3                    |
| Professional   | 5.2                     | 0                            | 23.8     | 7.6            | 36.6                   |
| Technical      | 10.8                    | 15                           | 0        | 0              | 25.8                   |
| Administrative | 0.5                     | 0                            | 0        | 0              | 0.5                    |
| Other          | 0                       | 0                            | 0        | 0              | 0                      |
| Computed Total | 19.8                    | 15                           | 23.8     | 7.6            | 66.2                   |

**Student Count by Classification of Instructional Programs (CIP) Code**

| Undergraduate | Graduate | Post-Doctorate | CIP Code   |
|---------------|----------|----------------|--|
| 8             | 16       | 1              | 01.11 Plant Sciences.  |
| 8             | 12       | 3              | 01.12 Soil Sciences.   |
| 2             | 6        | 0              | 45.14 Rural Sociology.   |
| 4             | 7        | 2              | 14.03 Agricultural Engineering.                                  |
| 5             | 7        | 4              | 01.99 Agriculture, Agriculture Operations, and Related Sciences, |
| 0             | 1        | 0              | 13.01 Education, General.  |

**Target Audience**

The CSCAP team has six key audiences with each receiving attention and efforts for this reporting period: (1) all team members; (2) CSCAP graduate students; (3) affiliated undergraduate students; (4) agricultural stakeholders including farmers and the agribusiness industry; (5) citizen stakeholders including high school students; and (6) the scientific community. First, the team actively worked to develop individual team members through cross-training of others' disciplines, scientific discovery, and team science exercises that built transdisciplinary capacity. Second, the team is focused on uniquely training CSCAP graduate students to emerge from their programs with the ability to comprehend complex societal and environmental challenges from a multi-pronged cross disciplinary and stakeholder collaborative approach. Third, internship opportunities, mentoring, and employment within laboratories and field research experiments allow several inlets for undergraduate students to work alongside and learn from team scientists. Fourth, the team's extension educators are building relational networks and working to build knowledge of and adaptation to a changing climate among farmers and agribusiness stakeholders in their respective states. Fifth, the team has conducted non-formal learning events to educate and build capacity among high school teachers. Sixth, the team is working hard to discover new science and understanding behind the physical and social factors influencing the capacity for corn-based cropping systems to mitigate and adapt to a changing climate; these findings are communicated through societal presentations, refereed journals, and white papers.

**Products**

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Mitchell, D.C., M.J. Helmers, T.B. Parkin, X.. Zhou and M.J. Castellano. 2014. Comparing nitrate sink strength in perennial filter strips at toeslope of cropland watersheds. J. Environ. Qual. 43(6).  
<http://dx.doi.org/10.2134/jeq2014.05.0201>



| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Iqbal, J., M.J. Helmers, X.B. Zhou, T.B. Parkin and M. Castellano. 2014. Denitrification and N<sub>2</sub>O emissions in annual croplands, perennial grass buffers and restored perennial grasslands. *Soil Sci. Soc. Am. J.* <http://dx.doi.org/10.2136/sssaj2014.05.0221>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2013           | YES                       |

**Citation**

Iqbal, J., T.B. Parkin and M. Castellano. 2013. Accuracy and precision of no instrument is guaranteed: A reply to Rosenstock et al. *Glob. Change Biol.* 20(5): 1362-1365. <http://dx.doi.org/10.1111/gcb.12446>.

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Campbell, B., L. Chen, C. Dygert and W. Dick. 2014. Tillage and crop rotation impacts on greenhouse gas fluxes from two long-term agronomic experimental sites in Ohio. *J. Soil Water Conserv., Sp. Issue for Climate and Agriculture.* 69(6): 543-552. <http://dx.doi.org/10.2489/jswc.69.6.543>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Daigh, A.L., M.J. Helmers, E. Klavivko, X. Zhou, R. Goeken, J. Cavadini, D. Barker and J. Sawyer. 2014. Soil water during the drought of 2012 as affected by rye cover crop in fields in Iowa and Indiana. *J. Soil Water Conserv., Sp. Issue for Climate and Agriculture.* 69(6): 564-573. <http://dx.doi.org/10.2489/jswc.69.6.564>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Klavivko, E.J., M.J. Helmers, L.J. Abendroth, D. Herzmann, R. Lal, M. Castellano, D.S. Mueller, J.E. Sawyer, R.P. Anex, R.W. Arriitt, B. Basso, J.V. Bonta, L. Bowling, R.M. Cruse, N.R. Fausey, J. Frankenberger, P. Gassman, A.J. Gassmann, C.L. Kling, A. Kravchenko, J.G. Lauer, F.E. Miguez, E.D. Nafziger, N. Nkongolo, M. O'Neal, L.B. Owens, P. Owens, P. Scharf, M.J. Shipitalo, J.S. Strock and M.B. Villamil. 2014. Standardized research protocols enable transdisciplinary research of climate variation impacts in corn production systems. *J. Soil Water Conserv., Sp. Issue for Climate and Agriculture.* 69(6): 532-542. <http://dx.doi.org/10.2489/jswc.69.6.532>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Kravchenko, A.N., B. Hildebrandt, T.L. Marsh, W.C. Negassa, A.K. Guber and M.L. Rivers. 2014. Intra-aggregate pore structure influences phylogenetic composition of bacterial community in macroaggregates. *Soil Sci. Soc. Am. J.* 78: 1924-1939. <http://dx.doi.org/10.2136/sssaj2014.07.0308>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Kravchenko, A.N., W. Negassa, A.K. Guber and S. Schimidt. 2014. New approach to measure soil particulate organic matter in intact samples using X-ray computed micro-tomography. *Soil Sci. Soc. Am. J.* 78: 1177-1185. <http://dx.doi.org/10.2136/sssaj2014.01.0039>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Kravchenko, A.N. and G.P. Robertson. 2014. Statistical challenges in analyses of chamber-based soil CO<sub>2</sub> and N<sub>2</sub>O emissions data. *Soil Sci. Soc. Am. J.* <http://dx.doi.org/doi:10.2136/sssaj2014.08.0325>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2013           | YES                       |

**Citation**

Munoz, J.D., J. Steibel, S. Snapp and A.N. Kravchenko. 2013. Cover crop effect on corn growth and yield as influenced by topography. *Agric. Ecosyst. Environ.* 189: 229-239. <http://dx.doi.org/10.1016/j.agee.2014.03.045>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Obade, V. and R. Lal. 2014. Soil quality evaluation under different land management practices. *Environ. Earth Sci.* 72: 4531-4549. <http://dx.doi.org/10.1007/s12665-014-3353-z>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Obade, V. and R. Lal. 2014. Using meta-analyses to assess pedo-variability under different land uses and soil management in central Ohio, USA. *Geoderma*. 232-234: 56-68. <http://dx.doi.org/10.1016/j.geoderma.2014.04.030>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Lal, R. 2014. Societal value of soil carbon. *J. Soil Water Conserv., Sp. Issue for Climate and Agriculture*. 69(6): 186A-192A. <http://dx.doi.org/doi:10.2489/jswc.69.6.186A>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Kumar, S., T. Nakajima, A. Kadono, R. Lal and N. Fausey. 2014. Long-term tillage and drainage influences on greenhouse gas fluxes from a poorly-drained soil of central Ohio. *J. Soil Water Conserv., Sp. Issue for Climate and Agriculture*. 69(6): 553-563. <http://dx.doi.org/10.2489/jswc.69.6.553>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Mukherjee, A. and R. Lal. 2014. Comparison of soil quality index using three methods. *PLoS one*. 9(8): 1-15. <http://dx.doi.org/10.1371/journal.pone.0105981>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Nakajima, T. and R. Lal. 2014. Tillage and drainage management effect on soil gas diffusivity. *Soil Tillage Res.* 135: 71-78. <http://dx.doi.org/10.1016/j.still.2013.09.003>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2013           | YES                       |

**Citation**

Haruna, S.I. and N.V. Nkongolo. 2013. Spatial and fractal characterization of soil chemical properties and nutrients across depths in a clay-loam soil. Commun. Soil Sci. Plant Anal. 45(17): 2305-2318.  
<http://dx.doi.org/10.1080/00103624.2014.932371>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2013           | YES                       |

**Citation**

Haruna, S.I. and N.V. Nkongolo. 2013. Variability of soil physical properties in a clay-loam soil and its implication on soil management practices. ISRN Soil Science. 2013: p. 1-8. <http://dx.doi.org/10.1155/2013/418586>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

M. Necpálová, R.P. Anex, A.N. Kravchenko, L.J. Abendroth, S.J. Del Grosso, W.A. Dick, M.J. Helmers, D. Herzmann, J.G. Lauer, E.D. Nafziger, J.E. Sawyer, P.C. Scharf, J.S. Strock and M.B. Villamil. 2014. What does it take to detect a change in soil carbon stock? A regional comparison of minimum detectable difference and experiment duration in the North-Central United States. J. Soil Water Conserv., Sp. Issue for Climate and Agriculture. 69(6): 517-531.  
<http://dx.doi.org/10.2489/jswc.69.6.517>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2013           | YES                       |

**Citation**

Jha, M.K., P.W. Gassman and Y. Panagopoulos 2013. Regional changes in nitrate loadings in the Upper Mississippi River Basin under predicted mid-century climate. Reg. Environ. Change. <http://dx.doi.org/10.1007/s10113-013-0539-y>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Rabotyagov, S., A. Valcu, and C.L. Kling, P.W. Gassman, N.N. Rabalais and R.E. Turner. 2014. The economics of dead zones: causes, impacts, policy challenges, and a model of the Gulf of Mexico Hypoxic Zone J. Environ. Econ. Manage. 8(1): 58-79. <http://dx.doi.org/10.1093/reep/ret024>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Panagopoulos, Y., P.W. Gassman, R. Artritt, D.E. Herzmann, T. Campbell, M.K. Jha, C.L. Kling, R. Srinivasan, M. White and J.G. Arnold. 2014. Surface water quality and cropping systems sustainability under a changing climate in the Upper Mississippi River Basin. J. Soil Water Conserv., Sp. Issue for Climate and Agriculture. 69(6): 483-494.  
<http://dx.doi.org/10.2489/jswc.69.6.483>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Rabotyagov, S.S., A. Valcu, C.L. Kling, T. Campbell, P.W. Gassman and M. Jha. 2014. An improved reverse auction for addressing water quality in agricultural watersheds using coupled simulation-optimization models. Frontiers of Economics in China. 9(1): 25-51. <http://dx.doi.org/10.3868/s060-003-014-0003-1>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Kling, C.L., Y. Panagopoulos, A. Valcu, P.W. Gassman, S. Rabotyagov, T. Campbell, M. White, J.G. Arnold, R. Srinivasan, M.K. Jha, J. Richardson, G. Turner and N. Rabalais. 2014. Land use model integrating agriculture and the environment (LUMINATE): Linkages between agricultural land use, local water quality and hypoxic concerns in the Gulf of Mexico basin. *Eur.J. Agric. Econ.* 41(3): 431-459. <http://dx.doi.org/10.1093/erae/jbu009>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Herzmann, D.E., L.J. Abendroth and L.D Bunderson. 2014. Data management approach to multidisciplinary agricultural research and syntheses. *J. Soil Water Conserv., Sp. Issue for Climate and Agriculture.* 69(6): 180A-185A. <http://dx.doi.org/10.2489/jswc.69.6.180A>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2013           | YES                       |

**Citation**

Rabatyagor, S., A. Valcu and C. Kling. 2013. Reversing property rights: practice-based approaches for controlling agricultural nonpoint-source water pollution when emissions aggregate nonlinearly. *Am. J. Agric. Econ.* 96(2): 397-419. <http://dx.doi.org/10.1093/ajae/aat094>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2013           | YES                       |

**Citation**

Kling, C.L. and A. Valcu. 2013. State level efforts to regulate agricultural sources of water quality impairment. *Choices.* 28(3): 1-4. [http://www.choicesmagazine.org/magazine/pdf/cmsarticle\\_326.pdf](http://www.choicesmagazine.org/magazine/pdf/cmsarticle_326.pdf)

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Basche, A.D., G.E. Roesch-McNally, L.A. Pease, C.D. Eidson, G. Bou Lahdou, M.W. Dunbar, T.J. Frank, L. Frescoln, L. Gu, R. Nagelkirk, J. Pantoja and A.K. Wilke. 2014. Challenges and opportunities in transdisciplinary science: The experience of next generation scientists in an agriculture and climate research collaboration. *J. Soil Water Conserv., Sp. Issue for Climate and Agriculture.* 69(6): 176A-179A. <http://dx.doi.org/10.2489/jswc.69.6.176A>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Basche, A., F. Miguez, T. Kasper and M. Castellano. 2014. Do cover crops increase or decrease nitrous oxide emissions in agroecosystems? A meta-analysis. *J. Soil Water Conserv., Sp. Issue for Climate and Agriculture.* 69(6): 471-482. <http://dx.doi.org/10.2489/jswc.69.6.471>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Arbuckle, J.G., J. Hobbs, A. Loy, L.W. Morton, L. Prokopy and J. Tyndall. 2014. Understanding farmer perspectives on climate change: Toward effective communication strategies for adaptation and mitigation in the corn belt. *J. Soil Water Conserv., Sp. Issue for Climate and Agriculture.* 69(6): 505-516. <http://dx.doi.org/10.2489/jswc.69.6.505>

org/10.2489/jswc.69.6.505

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

#### Citation

Reimer, A., A. Thompson, L.S. Prokopy, J. Arbuckle, K. Genskow, D. Jackson-Smith, G. Lynne, L. McCann, L.W. Morton and P. Nowak. 2014. People, place, behavior, and context: A research agenda for expanding our understanding of what motivates farmers' conservation behaviors. J. Soil Water Conserv. 69: 57A-61A. <http://dx.doi.org/10.2489/jswc.69.2.57A>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2013           | YES                       |

#### Citation

Arbuckle, J., L.W. Morton and J. Hobbs. 2013. Understanding farmer perspectives on climate change adaptation and mitigation: The roles of trust in sources of climate information, climate change beliefs, and perceived risk. Environ. Behav. 1-30. <http://dx.doi.org/10.1177/0013916513503832>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

#### Citation

Tyndall, J.C. and G. Roesch. 2014. A standardized approach to the financial analysis of structural water quality BMPs. J. Extension. 52: 3 <http://www.joe.org/joe/2014june/a10.php>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

#### Citation

Wilke, A.K. and L.W. Morton. 2014. Climatologists' patterns of conveying climate science to the agricultural community. Agric. Human Values. 32:99-110. <http://dx.doi.org/10.1007/s10460-014-9531-5>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

#### Citation

Olson, K.R. and L.W. Morton. 2014. Dredging of the fractured bedrock laden Mississippi river channel at Thebes, Illinois. J. Soil Water Conserv. 69(2): 31A-35A. <http://dx.doi.org/10.2134/10.2489/jswc.69.2.31A>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

#### Citation

Morton, L.W. 2014. Achieving water security in agriculture the human factor. Agron. J. 106: 1-4. <http://dx.doi.org/10.2134/agronj14.0039>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

#### Citation

Olson, K.R. and L.W. Morton. 2014. The 2011 Ohio River floodwaters reclaimed its ancient floodway through the cache river valley of southern Illinois. J. Soil Water Conserv. 69(1): 5A-10A. <http://dx.doi.org/10.2489/jswc.69.1.5A>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Eigenbrode S., L.W. Morton and T. Martin. 2014. Big interdisciplinarity to address climate change and agriculture: Lessons from three USDA coordinated agricultural projects (CAPs) J. Soil Water Conserv., Sp. Issue for Climate and Agriculture. 69(6): 170A-175A. <http://dx.doi.org/10.2489/jswc.69.6.170A>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Morton, L.W. 2014. The science of variable climate and agro-ecosystem management. J. Soil Water Conserv., Sp. Issue for Climate and Agriculture. 69(6): 207A-212A. <http://dx.doi.org/10.2489/jswc.69.6.207A>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | YES                       |

**Citation**

Prokopy, L., L. Morton, J. Arbuckle, A. Mase and A. Wike. 2014. Agricultural stakeholder views on climate change: Implications for conducting research and outreach. Bull. Amer. Meteor. Soc. <http://dx.doi.org/10.1175/BAMS-D-13-00172.1>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | NO                        |

**Citation**

Kladivko, E.J., T.C. Kaspar, D.B. Jaynes, R.W. Malone, J. Singer, X.K. Morin and T. Searchinger. 2014. Cover crops in the upper midwestern United States: Potential adoption and reduction of nitrate leaching in the Mississippi river basin. J. Soil Water Conserv. 69(4): 279-291. <http://dx.doi.org/10.2489/jswc.69.4.279>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | NO                        |

**Citation**

Malone, R.W., D.B. Jaynes, T.C. Kaspar, K.R. Thorpe, E. Kladivko, L. Ma, D.E. James, J. Singer, X.K. Morin and T. Searchinger. 2014. Cover crops in the upper midwestern United States: Simulated effect on nitrate leaching with artificial drainage. J. Soil Water Conserv. 69(4): 292-305. <http://dx.doi.org/10.2489/jswc.69.4.292>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | NO                        |

**Citation**

Obade, V., R. Lal and R. Moore. 2014. Assessing the accuracy of soil and water quality characterization using remote sensing. Water Resour. Econ. 28(14): 5091-5109. <http://dx.doi.org/10.1007/s11269-014-0796-7>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | NO                        |

**Citation**

Olson, K., M. Al-Kaisi, R. Lal and B. Lowery. 2014. Examining the paired comparison method approach for determining soil organic carbon sequestration rates. J. Soil Water Conserv., Sp. Issue for Climate and Agriculture. 69(6): 193A-197A. <http://dx.doi.org/10.2489/jswc.69.6.193A>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | NO                        |

**Citation**

Oliveira, L.F. and P.C. Scharf. 2014. Diurnal variability in reflectance measurements from cotton. Crop Sci. 54: 1769-1781. <http://dx.doi.org/10.2135/cropsci2013.04.0217>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2013           | NO                        |

**Citation**

Casa, R., F. Castaldi, S. Pascucci, B. Basso and S. Pignatti. 2013. Geophysical and hyperspectral data fusion techniques for in-field estimation of soil properties. Vadose Zone J. 12: 1-10. <http://dx.doi.org/10.2136/vzj2012.0201>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2013           | NO                        |

**Citation**

Basso, B., A. Kendall and D.W. Hyndman. 2013. The future of agriculture over the Ogallala Aquifer: Solutions to grow crops more efficiently with limited water. Earth Sci. 1(1): 39-41. <http://dx.doi.org/10.1002/2013EF000107>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | NO                        |

**Citation**

Marino, S., M. Aria. B. Basso, A. Leone and A. Alvino. 2014. Use of soil and vegetation spectroradiometry to investigate water use efficiency of a drip irrigated tomato. Eur. J. Agron. 59: 66-77. <http://dx.doi.org/10.1016/j.eja.2014.05.012>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | NO                        |

**Citation**

Kavdir, Y., W. Zhang, B. Basso and A.J.M. Smucker. 2014. Development of a new long-term drought resilient soil water technology. J. Soil Water Conserv. 69(5): 154A-160A. <http://dx.doi.org/10.2489/jswc.69.5.154A>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | NO                        |

**Citation**

Cammarano D., G. Fitzgerald, R. Casa and B. Basso. 2014. Assessing the robustness of vegetation indices to estimate wheat N in Mediterranean environments. Remote Sensing. 6: 2827-2844. <http://dx.doi.org/10.3390/rs6042827>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | NO                        |

**Citation**

Van Hoang, T., T.Y. Chou, B. Basso, M.L. Yeh and C.Y. Chien. 2014. Climate change impact on agricultural productivity and environment influence based on simulation model. 3(1): 642-659. <http://technical.cloud-journals.com/index.php/IJARSG/article/view/Tech-286>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | NO                        |

**Citation**

Martre, P., D. Wallach, S. Asseng, F. Ewert, J.W. Jones, R.P. Rötter, K.J. Boote, A.C. Ruane, P.J. Thorburn, D. Cammarano, J.L. Hatfield, C. Rosenzweig, P.K. Aggarwal, C. Angulo, B. Basso, P. Bertuzzi, C. Biernath, N. Brisson, A.J. Challinor, J. Doltra, S. Gayler, R. Goldberg, R.F. Grant, L. Heng, J. Hooker, L.A. Hunt, J. Ingwersen, R.C Izaurralde, K.C. Kersebaum, C. Müller, S.N. Kumar, C. Nendel, G. O'Leary, J.E. Olesen, T.M. Osborne, T. Palosuo, E. Priesack, D. Ripoche, M.A. Semenov, I. Shcherbak, P. Steduto, C.O. Stöckle, P. Stratonovitch, T. Streck, I. Supit, F. Tao, M. Travasso, K. Waha, J.W. White and J. Wolf. 2014. Multimodel ensembles of wheat growth: Many models are better than one. Glob. Change Biol. <http://dx.doi.org/10.1111/gcb.12768>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | NO                        |

**Citation**

Basso, B. and J.T. Ritchie. 2014. Temperature and drought effects on maize yield. Nature Clim. Change 4: 233. <http://dx.doi.org/10.1038/nclimate2139>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | NO                        |

**Citation**

Bassu, S. N. Brisson, J. Durand , K. Boote, J. Lizaso, J.W. Jones, C. Rosenzweig, A.C. Ruane, M. Adam, C. Baron, B. Basso, C. Biernath, H. Boogaard, S. Conijn, M. Corbeels, D. Deryng, G. De Sanctis, S. Gayler, P. Grassini, J. Hatfield, S. Hoek, C. Izaurralde, R. Jongschaap, A.R. Kemanian, K.C. Kersebaum, S. Kim, N.S. Kumar, D. Makowski, C.Müller, C. Nendel, E. Priesack, M.V. Pravia, F. Sau, I. Shcherbak, F. Tao, E. Teixeira, D. Timlin and K. Waha. 2014. How do various maize crop models vary in their responses to climate change factors?. Glob. Change Biol. 20(7): 2301–2320. <http://dx.doi.org/10.1111/gcb.12520>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | NO                        |

**Citation**

Dumont B., B. Basso, V. Leemans, B. Bodson, J.P. Destain, and M.F. Destain. 2014. Systematic analysis of site-specific yield distributions resulting from nitrogen management and climatic variability interactions. Precis. Agric. <http://dx.doi.org/10.1007/s11119-014-9380-7>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2013           | NO                        |

**Citation**

Olson, K.R. and L. W. Morton 2014. Runaway barges damage Marseilles Lock and Dam during 2013 flood on the Illinois river. J. Soil Water Conserv. 69(4): 104-109. <http://dx.doi.org/10.2489/jswc.69.4.104A>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2014           | NO                        |

**Citation**

Harr, R.N., L. Wright Morton, S.R. Rusk, D.M. Engle, J.R. Miller and D. Debinski. 2014. Landowners' perceptions of risk in grassland management: woody plant encroachment and prescribed fire. Ecol. Soc. 19(2): 41. <http://doi.org/10.5751/ES-06404-190241>



| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2013           | NO                        |

**Citation**

Morton, L.W. and K.R. Olson. 2014. Addressing soil degradation and flood risk decision making in levee protected agricultural lands under increasingly variable climate conditions. J. Environ. Prot. 5: 1220-1234.  
<http://dx.doi.org/10.4236/jep.2014.512117>

| Type             | Status    | Year Published | NIFA Support Acknowledged |
|------------------|-----------|----------------|---------------------------|
| Journal Articles | Published | 2013           | NO                        |

**Citation**

Comito, J., J. Wolseth and L.W. Morton. 2013. Stewards, businessmen, and heroes? Role conflict and contradiction among row-crop farmers in an age of environmental uncertainty. Hum. Organ. 72(4): 283-292.  
<http://search.proquest.com.proxy.lib.iastate.edu/docview/1467970847/abstract?accountid=10906>

| Type                 | Status    | Year Published | NIFA Support Acknowledged |
|----------------------|-----------|----------------|---------------------------|
| Theses/Dissertations | Published | 2014           | YES                       |

**Citation**

Lahdou, G.B. 2014. Systematic analysis of drainage events in free draining and managed subsurface drainage systems. Purdue University, ProQuest, UMI Dissertations Publishing, 2014. Library weblink not online yet.

| Type                 | Status    | Year Published | NIFA Support Acknowledged |
|----------------------|-----------|----------------|---------------------------|
| Theses/Dissertations | Published | 2013           | YES                       |

**Citation**

Goeken, R. 2013. Effects of perennial and cover crops on hydrology in Iowa. Graduate Theses and Dissertations, Iowa State University. Paper 13322. <http://lib.dr.iastate.edu/etd/13322/>

| Type                 | Status    | Year Published | NIFA Support Acknowledged |
|----------------------|-----------|----------------|---------------------------|
| Theses/Dissertations | Published | 2014           | YES                       |

**Citation**

Zaworski, E. 2014. Effects of ILeVO® on soybean sudden death syndrome and soybean cyst nematode. Graduate Theses and Dissertations, Iowa State University. Library weblink not online yet.

| Type                 | Status    | Year Published | NIFA Support Acknowledged |
|----------------------|-----------|----------------|---------------------------|
| Theses/Dissertations | Published | 2014           | YES                       |

**Citation**

Li, A. 2014. Model-based life cycle environmental impacts analysis of agricultural managements on corn production. Proquest Dissertations & Theses, University of Wisconsin, Madison, WI. Library link not online yet.

| Type                 | Status    | Year Published | NIFA Support Acknowledged |
|----------------------|-----------|----------------|---------------------------|
| Theses/Dissertations | Published | 2014           | YES                       |

**Citation**

Gu, L. 2014. The life cycle assessment of corn-based cropping systems with and without cover crop. Proquest Dissertations & Theses, University of Wisconsin, Madison, WI. Library link not online yet.

| Type                 | Status    | Year Published | NIFA Support Acknowledged |
|----------------------|-----------|----------------|---------------------------|
| Theses/Dissertations | Published | 2013           | NO                        |

**Citation**

Chun-mei, C. 2013. Observation-based algorithm development for subsurface hydrology in northern temperate wetlands. Purdue University, ProQuest, UMI Dissertations Publishing, 2013. 3612937.  
<http://search.proquest.com/docview/1508833742>

| Type                 | Status    | Year Published | NIFA Support Acknowledged |
|----------------------|-----------|----------------|---------------------------|
| Theses/Dissertations | Published | 2014           | YES                       |

**Citation**

Ashtekar, J. 2014. Utilizing knowledge-based inference soil mapping to scale soil-crop interactions. Purdue University, ProQuest, UMI Dissertations Publishing, 2014. Library weblink not online yet.

| Type                 | Status    | Year Published | NIFA Support Acknowledged |
|----------------------|-----------|----------------|---------------------------|
| Theses/Dissertations | Published | 2014           | NO                        |

**Citation**

Hobbs, J. 2014. Characterizing diurnal and interannual variability in the atmosphere through physical and stochastic models. Graduate Theses and Dissertations, Iowa State University. Paper 13648. <http://lib.dr.iastate.edu/etd/13648/>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

**Citation**

Castellano, M. 2013. Nitrous oxide emissions from intensively managed croplands: the role of carbon inputs. American Geophysical Union Fall Meeting, San Francisco, CA. December 9-13, 2013.

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Lee, S. and R.M. Cruse. 2014. Impact of soil erosion and climate on crop yield. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/18-Lee%20and%20Cruse.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/18-Lee%20and%20Cruse.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Walia, M. and W.A. Dick. 2014. Effect of gypsum and crop residues on greenhouse gas fluxes from two contrasting soils in Ohio. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/25-Walia%20and%20Dick.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/25-Walia%20and%20Dick.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Sengupta, A. and W.A. Dick. 2014. Microbial diversity in long-term plots using pyrosequencing. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/24-Sengupta%20and%20Dick.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/24-Sengupta%20and%20Dick.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

**Citation**

Chen, L., D. Kost, C. Dygert and W. Dick. 2013. Tillage, crop rotation, nitrogen fertilizer and cover crop impacts on greenhouse gas fluxes from an Ohio soil. ASA-CSSA-SSSA Annual Meeting, Tampa, FL. Nov. 3-6, 2013. <https://scisoc.confex.com/crops/2013am/webprogram/Paper79784.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Fausey, N.R. 2014. Nutrient concentration trends in drainage water as effected by DWM. NCREA 217 Meeting, Findlay, OH. Apr. 2014.

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Snyder, E., J. Srock and N. Fausey. 2014. Regional differences in water use by corn under different cropping systems. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/03-Snyder%20et%20al.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/03-Snyder%20et%20al.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Pease, L.A., N.R. Fausey and J.F. Martin. 2014. Controlled drainage reduces nitrogen and phosphorus loading in the Lake Erie watershed. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/05-Kilpatrick%20et%20al.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/05-Kilpatrick%20et%20al.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Fausey, N.R. 2014. Impact of controlled drainage on nitrogen and phosphorus loading in the Lake Erie watershed. ASABE Annual International Meeting in Montreal, Canada. July 13-16, 2014.

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Frankenberger, J., M. Helmers and S. Wohnoutka. 2014. Drainage water management. Field Demonstrations, CSCAP Resilient Agriculture Conference, Ames, IA. Aug. 5-7, 2014. [http://sustainablecorn.org/conf-pages/images/Program\\_ResilientAg.pdf](http://sustainablecorn.org/conf-pages/images/Program_ResilientAg.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Saadat, S., C. Hughes, G.B. Lahdou, J. Frankenberger, L. Bowling and E. Kladviko. 2014. Drainage water management effect on soil moisture, drain flow, and overland flow. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014,

Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/04-Saadat%20et%20al.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/04-Saadat%20et%20al.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

#### Citation

Frankenberger, J.R., G. Lahdou and L. Bowling. 2014. Drainage research in Indiana. Agricultural Drainage Management Systems Task Force Meeting, Findlay, OH. Apr. 3, 2014.

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

#### Citation

Geiger, L., M. Helmers, C. Pederson and A. Lagzdins. 2014. Effects of drainage water management on crop yield, drainage volume, and nitrate loss in southeastern Iowa. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/06-Geiger%20et%20al.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/06-Geiger%20et%20al.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

#### Citation

Lagzdins, A., M. Helmers, C. Pederson, L. Geiger, X. Zhou and A. Daigh. 2014. Effects of nitrogen application timing, tillage systems and winter cereal rye cover crop on corn and soybean yields and nitrate-nitrogen concentrations from a tile-drained field in Iowa. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/07-Lagzdins%20et%20al.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/07-Lagzdins%20et%20al.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

#### Citation

Horton, K., J. Cavadini, E. Kladvko, J. Camberato and S. Casteel. 2013. Nitrogen cycling with oilseed radish cover crops in Indiana crop rotations. ASA-CSSA-SSSA Annual Meeting, Tampa, FL. Nov. 3-6, 2013. <https://scisoc.confex.com/scisoc/2013am/webprogram/Paper80528.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

#### Citation

Cavadini, J., K. Horton, E. Kladvko, B. Joern and D. Smith. 2013. Cover crop bicultures and their effects on phosphorus cycling and soil conservation. ASA-CSSA-SSSA Annual Meeting, Tampa, FL. Nov. 3-6, 2013. <https://scisoc.confex.com/scisoc/2013am/webprogram/Paper81449.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

#### Citation

Kladvko, E. 2014. Cover crops and climate change. CSCAP Resilient Agriculture Conference, Ames, IA. Aug. 5-7, 2014. [http://sustainablecorn.org/conf-pages/images/Program\\_ResilientAg.pdf](http://sustainablecorn.org/conf-pages/images/Program_ResilientAg.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Frank, T.J. and E.J. Kladvko. 2014. Effects of a Cereal Rye (*Secale cereale* L.) cover crop on soil properties and crop productivity in southeast Indiana. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/08-Frank%20and%20Kladvko.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/08-Frank%20and%20Kladvko.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

**Citation**

Kravchenko, A. 2013. Statistical challenges in soil carbon and GHG emission analyses. ASA-CSSA-SSSA Annual Meeting, Tampa, FL. Nov. 3-6, 2013. <https://scisoc.confex.com/scisoc/2013am/webprogram/Paper78842.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

**Citation**

Negassa, W., A. Guber, A. Kravchenko, B. Hildebrandt, T. Marsh and M. Rivers. 2013. Does X-ray computed Tomography affect soil respiration and microbial activity?. ASA-CSSA-SSSA Annual Meeting, Tampa, FL. Nov. 3-6, 2013. <https://scisoc.confex.com/scisoc/2013am/webprogram/Paper79829.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

**Citation**

Ladoni, M. and A. Kravchenko 2013. Interactive effects of cover crops and topography on soil nitrate levels. ASA-CSSA-SSSA Annual Meeting, Tampa, FL. Nov. 3-6, 2013. <https://scisoc.confex.com/scisoc/2013am/webprogram/Paper79045.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

**Citation**

Munoz-Robayo, J.D., A.K. Guber, B. Basso and A. Kravchenko. 2013. One-dimensional modeling of crop production with topography corrected infiltration. ASA-CSSA-SSSA Annual Meeting, Tampa, FL. Nov. 3-6, 2013. <https://scisoc.confex.com/scisoc/2013am/webprogram/Paper79338.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

**Citation**

Negassa, W., A. Guber, A. Kravchenko and M. Rivers. 2013. Soil pore structure influences rates of soil organic carbon and plant residue decomposition: Evidence from coupled incubation and X-Ray computed tomography analyses. ASA-CSSA-SSSA Annual Meeting, Tampa, FL. Nov. 3-6, 2013. <https://scisoc.confex.com/scisoc/2013am/webprogram/Paper79433.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Kravchenko, A.N., B. Hildebrandt, T.L.Marsh, W. Negassa, A.K. Guber and M.L. Rivers. 2014. Better understanding of intra-aggregate processes from combining X-ray computed micro-tomography and phylogenetic composition of bacterial community analyses. Annual meeting of British Society of Soil Science,

Manchester, United Kingdom. Sept. 3-4, 2014.

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

#### Citation

Negassa, W., A.K. Guber, A.N. Kravchenko and M.L. Rivers. 2014. Influence of pore size distributions on decomposition of maize leaf residue: evidence from X-ray computed micro-tomography. Annual meeting of the European Geosciences Union, Vienna, Austria. Apr. 27-May 2, 2014.

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

#### Citation

Obade, V. and R. Lal. 2013. Using Meta-Analyses to assess pedo-variability under different land management. ASA-CSSA-SSSA Annual Meeting, Tampa, FL. Nov. 3-6, 2013.  
<https://scisoc.confex.com/scisoc/2013am/webprogram/Paper78476.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

#### Citation

Mukherjee, A. and R. Lal. 2013. Tillage effects on quality of two contrasting soils. ASA-CSSA-SSSA Annual Meeting, Tampa, FL. Nov. 3-6, 2013. <https://scisoc.confex.com/scisoc/2013am/webprogram/Paper79743.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

#### Citation

Lal, R. 2014. Carbon's resiliency role. CSCAP Resilient Agriculture Conference, Ames, IA. Aug. 5-7, 2014.  
[http://sustainablecorn.org/conf-pages/images/Program\\_ResilientAg.pdf](http://sustainablecorn.org/conf-pages/images/Program_ResilientAg.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

#### Citation

Obade, V. and R. Lal. 2014. Towards a consistent soil quality index. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/19-Obade%20and%20Lal.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/19-Obade%20and%20Lal.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

#### Citation

Nakajima, T. and R. Lal. 2014. Assessing of soil quality index by scoring function analysis in Ohio. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/20-Nakajima%20and%20Lal.PDF](http://www.sustainablecorn.org/Publications/Posters_docs/2014/20-Nakajima%20and%20Lal.PDF)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Mukherjee, A. and R. Lal. 2014. Comparison of soil quality from three on-site farms in Ohio. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/21-Mukherjee%20and%20lal.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/21-Mukherjee%20and%20lal.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Kazulla, M., J. Lauer and T. Diallo. 2014. Greenhouse gases emission from Wisconsin soils in long-term corn-based crop rotations. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/28-Maciek%20Kazula.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/28-Maciek%20Kazula.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Lauer, J. 2014. Cropping Systems Coordinated Agricultural Project: Extended rotations. CSCAP Resilient Agriculture Conference, Ames, IA. Aug. 5-7, 2014. [http://sustainablecorn.org/conf-pages/images/Program\\_ResilientAg.pdf](http://sustainablecorn.org/conf-pages/images/Program_ResilientAg.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

**Citation**

Nafziger, E.D. and M.B. Villamil. 2013. Crop rotation and tillage effects on corn and soybean yields. ASA-CSSA-SSSA Annual Meeting, Tampa, FL. Nov. 3-6, 2013. <https://scisoc.confex.com/scisoc/2013am/webprogram/Paper80819.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

**Citation**

Zuber, S., G. Behnke, M.B. Villamil and E.D. Nafziger. 2013. Crop rotation and tillage effects on soil properties. ASA-CSSA-SSSA Annual Meeting, Tampa, FL. Nov. 3-6, 2013. <https://scisoc.confex.com/scisoc/2013am/webprogram/Paper79275.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

**Citation**

Behnke, G., S. Zuber, E.D. Nafziger and M.B. Villamil. 2013. Long term crop rotation and tillage effects on greenhouse gas emissions from corn, soybean and wheat systems in Illinois, USA. ASA-CSSA-SSSA Annual Meeting, Tampa, FL. Nov. 3-6, 2013. <https://scisoc.confex.com/scisoc/2013am/webprogram/Paper78787.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Panday, D. and N. Nkongolo. 2014. Effect of tillage, cover crop and corn-soybean rotation on soil pore space indices. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014.  
[http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/09-Panday%20and%20Nkongolo.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/09-Panday%20and%20Nkongolo.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Haruna, S.I., N.V. Nkongolo and S.H. Anderso. 2014. Effects of cover crop management on soil physical and biological properties. Soil and Water Conservation Society Annual Conference, Lombard, IL. July 27-30, 2014.  
[http://www.swcs.org/documents/filelibrary/14ac/Abstract\\_Book\\_\\_FINAL\\_FB7B07FB89022.pdf](http://www.swcs.org/documents/filelibrary/14ac/Abstract_Book__FINAL_FB7B07FB89022.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Ali, H. and N. Nkongolo. 2014. Relationship between soil properties and CO<sub>2</sub> and N<sub>2</sub>O emissions in corn-soybean rotation. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014.  
[http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/26-Ali%20and%20Nkongolo.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/26-Ali%20and%20Nkongolo.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Ali, H. and N.V. Nkongolo. 2014. Relationship between soil properties and CO<sub>2</sub> and N<sub>2</sub>O emissions in corn-soybean rotation. 50th Annual Missouri Academy of Science Conference, University of Central Missouri, Warrensburg, MO. Apr. 25-26, 2014. <http://missouriacadsci.org/2014Sections/Poster-Abstracts-revised.pdf>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Haruna, S.I. and N.V. Nkongolo. 2014. The effects of two years of tillage, cover crop and crop rotation on soil chemical properties and nutrients. 50th Annual Missouri Academy of Science Conference, University of Central Missouri, Warrensburg, MO. Apr. 25-26, 2014. <http://missouriacadsci.org/2014Sections/Poster-Abstracts-revised.pdf>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Sawyer, J., P. Scharf and D. Wolkowski. 2014. Rye cover crop, corn nitrogen fertilization, and canopy sensing. Field Demonstrations, CSCAP Resilient Agriculture Conference, Ames, IA. Aug. 5-7, 2014. [http://sustainablecorn.org/conf-pages/images/Program\\_ResilientAg.pdf](http://sustainablecorn.org/conf-pages/images/Program_ResilientAg.pdf)



| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

**Citation**

Scharf, P. 2013. Managing nitrogen in flood and drought. ASA-CSSA-SSSA Annual Meeting, Tampa, FL. Nov. 3-6, 2013. <https://scisoc.confex.com/scisoc/2013am/webprogram/Paper82124.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

**Citation**

Scharf, P. 2013. Sensor-based N rates: Opportunities, on-farm results, and obstacles. Ag Masters Conference, Champaign, IL. Dec. 2, 2013.

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

**Citation**

Scharf, P. 2013. Canopy sensors to match N rate to crop need and reduce the pool of vulnerable nitrate. ASA-CSSA-SSSA Annual Meeting, Tampa, FL. Nov. 3-6, 2013. <https://scisoc.confex.com/scisoc/2013am/webprogram/Paper82214.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

**Citation**

Strock, J.S., P.H. Pagliari, S.E. Feser and G. Feyereisen. 2013. Factoring P into N-Based controlled drainage management. ASA-CSSA-SSSA Annual Meeting, Tampa, FL. Nov. 3-6, 2013. <https://scisoc.confex.com/scisoc/2013am/webprogram/Paper77632.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

**Citation**

Strock, J.S., P.H. Pagliari, S.E. Feser, E.E. Evans and M.R. Coulter. 2013. Drainage management, climate change and soil health. ASA-CSSA-SSSA Annual Meeting, Tampa, FL. Nov. 3-6, 2013. <https://scisoc.confex.com/scisoc/2013am/webprogram/Paper78778.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Strock, J. 2014. Crop water use and it's role in ensuring resilience in a changing climate. CSCAP Resilient Agriculture Conference, Ames, IA. Aug.5-7, 2014. <http://sustainablecorn.org/Videos/Index.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Davis, V., B. Bailey and J. Iqbal. 2014. Measuring greenhouse gases. Field Demonstrations, CSCAP Resilient Agriculture Conference, Ames, IA. Aug. 5-7, 2014. [http://sustainablecorn.org/conf-pages/images/Program\\_ResilientAg.pdf](http://sustainablecorn.org/conf-pages/images/Program_ResilientAg.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Dunbar, M.W., A.J. Gassmann and M.E. O'Neal. 2013. Impacts of rye cover crop on ground-dwelling beneficial arthropods. Entomological Society of America, North Central Branch Meeting, Rapids City, IA, June 16-19, 2013. <https://esa.confex.com/esa/2013ncb/webprogram/Paper73303.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Dunbar, M.W., M.E. O'Neal, and A. Gassmann. 2014. Effect of crop management on root injury, adult abundance, and susceptibility to Bt toxins on western corn rootworm. Entomological Society of America North Central Branch Meeting, Des Moines, IA. Mar. 9-12, 2014. <https://esa.confex.com/esa/2014ncb/webprogram/Paper81658.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Dunbar, M. 2014. Crop insects. CSCAP Resilient Agriculture Conference, Ames, IA. Aug. 5-7, 2014. [http://sustainablecorn.org/conf-pages/images/Program\\_ResilientAg.pdf](http://sustainablecorn.org/conf-pages/images/Program_ResilientAg.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Zaworski, E.R., G.L. Tylka and D.S. Mueller. 2014. Effects of fluopyram on soybean sudden death syndrome and soybean cyst nematode. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/23-Zaworski%20et%20al.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/23-Zaworski%20et%20al.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Gu, L., R. Anex, E. Kladvko, M. Helmers, J. Sawyer and P. Scharf. 2014. Life cycle impacts of a corn-soybean system with and without cover crop. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/14-Gu%20et%20al.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/14-Gu%20et%20al.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Anex, R. 2014. Nitrogen and its role in agriculture resilience to climate change. CSCAP Resilient Agriculture Conference, Ames, IA. Aug. 5-7, 2014. [http://sustainablecorn.org/conf-pages/images/Program\\_ResilientAg.pdf](http://sustainablecorn.org/conf-pages/images/Program_ResilientAg.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Necpalova, M., M.N. Fienen, S. DelGrosso and R. Anex. 2014. Inverse modeling of DayCENT. Discovery Challenge Research Symposium, Wisconsin Institutes for Discovery, Madison, WI. May 21, 2014.  
<http://discovery.wisc.edu/home/town-center/programs--events/discovery-challenge/Discovery%20challenge.cmsx>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Arritt, R.W. and A.R. Daniel. 2014. Precipitation intensity changes in regional climate projections for North America. EGU General Assembly Conference, Vienna, Austria. Apr. 27 - May 2, 2014.

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Arritt, R., P.Y. Groisman and A.R. Daniel. 2014. Predicted changes in extreme heavy precipitation over North America. 7th International Scientific Conference on the Global Energy and Water Cycle, Hague, Netherlands. July 14-17, 2014.  
<http://gewex.org/2014conf/home.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Arritt, R., P.Y. Groisman and A.R. Daniel. 2014. Projecting trends in extreme precipitation with a multiple GCM and mixed physics ensemble. 3rd Lund Regional-scale Climate Modelling Workshop: 21st Century Challenges in Regional Climate Modelling, Lund, Sweden. June 16-19, 2014. <http://www.baltex-research.eu/RCM2014/afterm.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Basso, B. 2014. Predicting the impact of increasing temperatures on corn yield. CSCAP Resilient Agriculture Conference, Ames, IA. Aug. 5-7, 2014. [http://sustainablecorn.org/conf-pages/images/Program\\_ResilientAg.pdf](http://sustainablecorn.org/conf-pages/images/Program_ResilientAg.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Nagelkirk, R. and B. Basso. 2014. Modeling the impacts of climate change on midwestern U.S. corn yields. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014.  
[http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/1-Nagelkirk%20and%20Basso.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/1-Nagelkirk%20and%20Basso.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Bowling, L., S. Lee and M. Thelen. 2014. Soil moisture and water infiltration. Field Demonstrations, CSCAP Resilient Agriculture Conference, Ames, IA. Aug. 5-7, 2014. [http://sustainablecorn.org/PDF\\_download.php?f=conf-pages/images/Program\\_ResilientAg.pdf&d=true](http://sustainablecorn.org/PDF_download.php?f=conf-pages/images/Program_ResilientAg.pdf&d=true)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

**Citation**

De Kok-Mercado, O., C. Tornquist and P.W. Gassman. 2013. A synthesis of corn belt region soil carbon field studies in relation to carbon cycling model testing needs. ASA-CSSA-SSSA Annual Meeting, Tampa, FL. Nov. 3-6, 2013. <https://scisoc.confex.com/scisoc/2013am/webprogram/Paper82427.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

**Citation**

Gassman, P.W. , Y. Panagopoulos, C.L. Kling, M. Jha, J. Arnold, M. White, R. Srinivasan, S. Rabotyagov, M. Moskal, J. Anderson, R.E. Turner, N. Rabalais, R. Arritt and D. Herzmann. 2013. Development and application of SWAT modeling systems for two large U.S. corn belt river basins. Northwest A&F University, Yangling, China. Oct. 29, 2014.

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

**Citation**

Kling, C.L., S. Rabotyagov, T. Campbell, P. Gassman, M. Jha, J. Arnold, M. White, L. Norfleet, J. Atwood, R. Srinivasan, M. Moskal, R.E. Turner and N. Rabalais. 2013. Linking externalities from the land to their consequences in the sea: A model of land use, costs, hydrology and the Gulf of Mexico hypoxic zone. Water Resources Conference, Saint Paul, MN. Oct. 15-16, 2013. <http://www.wrc.umn.edu/waterconf/>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Rabotyagov, S., C. Kling, T. Campbell, P. Gassman, A. Valcu, J. Arnold, M. White, L. Norfleet, J. Atwood, J. Richardson, R.E. Turner and N. Rabalais. 2014. Cost-effective targeting of conservation investments to reduce the northern Gulf of Mexico hypoxic zone. Bren School Land Use and Ecosystem Services Workshop, University of California, Santa Barbara, CA. May 1-2, 2014.

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Kling, C., S. Rabotyagov, S., T. Campbell, A. Valcu, P. Gassman, J. Arnold, M. White, L. Norfleet, J. Atwood, R. Srinivasan, R.E. Turner and N. Rabalais. 2014. Optimization of agricultural conservation investments to cost-efficiently reduce the northern Gulf of Mexico hypoxic zone. World Congress of Environmental and Resource Economists, Istanbul, Turkey. June 28 – July 2, 2014. <http://www.webmeets.com/wcere/2014/prog/viewpaper.asp?pid=1773>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Gassman, P., Y. Panagopoulos, R. Arritt, D. Herzmann, T. Campbell, C. Kling, M. Jha, R. Srinivasan, M. White and J. Arnold. 2014. Hydrologic, water quality and crop productivity impacts of climate change in the Ohio-Tennessee river basin. International SWAT Conference, Pernambuco, Brazil. July 28 - Aug. 1, 2014. <http://swat.tamu.edu/conferences/2014/material/july-31/d2/>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

González Ramírez, M.J. and C.L. Kling 2014. Double-dipping in environmental markets under two second best scenarios. Heartland Environmental and Resource Economics Workshop, Univeristy of Illinois, Champaign-Urbana, IL. Oct. 31, 2014

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

**Citation**

Miguez, F. 2013. Evaluating cover crop impacts on soil water dynamics and predicting long term nitrate and cash crop yield effects using APSIM. ASA-CSSA-SSSA Annual Meeting, Tampa, FL. Nov. 3-6, 2013.  
<https://scisoc.confex.com/scisoc/2013am/webprogram/Paper80478.html>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Marcillo, G. and F. Miguez. 2014. A preliminary review of multidecadal corn productivity in Iowa at the county level. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014.  
[http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/02-Marcillo%20and%20Miguez.PDF](http://www.sustainablecorn.org/Publications/Posters_docs/2014/02-Marcillo%20and%20Miguez.PDF)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Basche, A., F. Miguez, S. Archontoulis and T. Kaspar. 2014. Early cover crop planting effects on crop yields and environmental benefits. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014.  
[http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/13-Basche%20et%20al.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/13-Basche%20et%20al.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Basche, A. and F. Miguez. 2014. Cover crop modeling approaches and opportunities for the MCCC Selector Tool. Midwest Cover Crop Council Meeting, Warsaw, IN. Apr. 8, 2014.

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Roesch, G., J. Arbuckle and J. Tyndall. 2014. What would farmers do? Adaptive management intentions of corn belt farmers given a climate change scenario. Rural Sociological Society Annual Conference. New Orleans, LA, July 30 - Aug. 3, 2014. <http://www.ruralsociology.us/wp-content/uploads/2014/07/2014-AM-Program-Session-Schedule-Updated.pdf>

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Arbuckle, J. and H. Rosman. 2014. Investigating Iowa farmers' use of nutrient management strategies: Results from the Iowa farm and rural life poll. Iowa Water Conference, Ames, IA. March 3, 2014.

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Arbuckle, J.G. Jr., J. Hobbs, A. Loy, L.W. Morton, L.S. Prokopy J. Tyndall. 2014. Midwestern farmers' six perspectives on climate change: Toward effective communication strategies for adaptation and mitigation. Global Food Security Consortium and Leroy and Barbara Everson Seed and Biosafety Symposium Closing Yield Gaps, Apr. 29-30, 2014, Ames, IA.

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Arbuckle, J. and H. Rosman. 2014. Investigating Iowa farmers' use of nutrient management strategies: Results from the Iowa farm and rural life poll. Soil and Water Conservation Society Annual Conference. Lombard, IL. July 28, 2014. [http://www.swcs.org/documents/filelibrary/14ac/Abstract\\_Book\\_\\_FINAL\\_FB7B07FB89022.pdf](http://www.swcs.org/documents/filelibrary/14ac/Abstract_Book__FINAL_FB7B07FB89022.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Hobbs, J. 2014. Regional water challenges and opportunities to increase crop resilience. CSCAP Resilient Agriculture Conference, Ames, IA. Aug. 5-7, 2014. [http://sustainablecorn.org/conf-pages/images/Program\\_ResilientAg.pdf](http://sustainablecorn.org/conf-pages/images/Program_ResilientAg.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Wilke, A. and L.W. Morton. 2014. Climate is always changing: Climatologists as trusted information source. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/29-Wilke%20and%20Morton.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/29-Wilke%20and%20Morton.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Higgins, T. 2014. Grazing cover crops: Lessons learned. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/16-Higgins.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/16-Higgins.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Edwards, L. 2014. Climatological context of extreme Events: The South Dakota blizzard of October 2013. REACCH 2014 Annual Meeting Posters. Tri-Cities, WA, March 5-8, 2013. <https://www.reacchpna>.

org/whatsnew/meetings/reacch-meeting-2014/reacch-2014-annual-meeting-materials/

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

#### Citation

Edwards, L. 2014. Water use demand for corn in northeastern South Dakota. American Meteorological Society conference on Atmospheric Biogeosciences and Agricultural and Forest Meteorology, Portland, OR. May 14, 2014.

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

#### Citation

Miller, W., O.P. McCubbins and L. Frescoln. 2014. Climate change and agriculture: Preparing the next generation via a climate change workshop. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/32-Miller%20et%20al.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/32-Miller%20et%20al.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

#### Citation

Moore, R., D. Todey, W. Miller, K. Lekies and N. Nkongolo. 2014. Climate education solutions for the US corn belt. The 14th National Conference and Global Forum on Science, Policy and the Environment: Building Climate Solutions, Washington DC. Jan. 28-30, 2014.

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

#### Citation

Moore, R. 2014. The mental mapping of amish farming production, social organization, and nature in Ohio, USA. Workshop on the Interconnections between the Humanities, Social Sciences, and Brain Science, Tohoku University Department of Resource and Environmental Economics, Feb. 20, 2014.

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

#### Citation

Blockstein, D. and A. Herrera. 2014. CAMEL (Climate Adaptation and Mitigation E-Learning) – A source of information about climate change and agriculture at [www.CAMELclimatechange.org](http://www.CAMELclimatechange.org). Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/31-Blockstein%20and%20Herrera.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/31-Blockstein%20and%20Herrera.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

#### Citation

Moore, R. K. Lekies, W. Miller, L. Frescoln, N. Nkongolo, D. Todey, M. Schaffbuch and D. Hudgins. 2014. Climate education solutions for the US corn belt. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/30-Moore%20et%20al.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/30-Moore%20et%20al.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Hatfield, J. 2014. Climate change and agriculture in the United States. CSCAP Resilient Agriculture Conference, Ames, IA. Aug. 5-7, 2014. [http://sustainablecorn.org/conf-pages/images/Program\\_ResilientAg.pdf](http://sustainablecorn.org/conf-pages/images/Program_ResilientAg.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Fausey, N.R. 2014. Nutrient concentration trends in drainage water as effected by DWM. ADMS Task Force Meeting, Findlay, OH. Apr. 2014.

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Kladivko, E., B. Overstreet and C. Ellis. 2014. Cover crops options and management. Field Demonstrations, CSCAP Resilient Agriculture Conference, Ames, IA. Aug. 5-7, 2014. [http://sustainablecorn.org/conf-pages/images/Program\\_ResilientAg.pdf](http://sustainablecorn.org/conf-pages/images/Program_ResilientAg.pdf)

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2013           | YES                       |

**Citation**

Hildebrandt, B., A.N. Kravchenko and T.L. Marsh. 2013. Biogeochemical processes controlling soil carbon storage in conventional and cover-crop-enhanced row crop agro-ecosystems. 5th Annual Argonne Soil Metagenomics Meeting, Bloomingdale, IL. Oct. 2–4, 2013.

| Type                  | Status    | Year Published | NIFA Support Acknowledged |
|-----------------------|-----------|----------------|---------------------------|
| Conference Papers and | Published | 2014           | YES                       |

**Citation**

Negassa, W., R. Price, A. Basir, S. Snapp and A. Kravchenko 2014. Cover crop and ridge tillage effect on greenhouse gas emission at diverse agricultural landscapes. Building an Integrated and Sustainable Vision for Cropping System [Poster Symposium]. 2014. Resilient Agriculture Conference, Aug. 5-7, 2014, Ames, IA. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0160-2014. [http://www.sustainablecorn.org/Publications/Posters\\_docs/2014/12-Negassa%20et%20al.pdf](http://www.sustainablecorn.org/Publications/Posters_docs/2014/12-Negassa%20et%20al.pdf)

**Other Products****Product Type**

Audio or Video

**Description**

Basso, B. 2014. Great Lakes now special: Food supply. Great Lakes Now. July 31, 2014. <http://www.greatlakesnow.org/2014/07/food-supply/>

**Product Type**

Audio or Video

**Description**

Frankenberger, J. 2013. Drainage water management. Television show 'Great Lakes Now Connect: Freshwater and Farming, developed by Detroit Public Television. Nov. 12, 2013.



**Product Type**

Audio or Video

**Description**

Thelen, M. 2013. Nitrogen use in corn production. Michigan State Radio, Michigan Farm Radio Network. July 2, 2013.

**Product Type**

Audio or Video

**Description**

[Anonymous Press] (Lois Wright Morton cited). 2014. Conference for corn belt farmers and future farmers. KRVN 880 Rural Radio, Nebraska Rural Radio Association. July 21, 2014.

**Product Type**

Audio or Video

**Description**

[Anonymous Press] (Lois Wright Morton cited). 2014. Conference for corn belt farmers and future farmers. KTIC 840 Rural Radio, Rural Radio Network. July 2, 2014.

**Product Type**

Other

**Description**

Edwards, L.M., M.J. Bunkers, J.T. Abatzoglou, D.P. Todey and L.E. Parker. 2014 No October 2013 blizzard in western South Dakota. In: Herring, S.C., M.P. Hoerling, T.C. Peterson and P.A. Stott, (editors), Explaining extreme events of 2013 from climate perspective, Bulletin of American Meteorological Society. 95(9): 23-25.  
[http://www2.ametsoc.org/ams/assets/File/publications/BAMS\\_EEE\\_2013\\_Full\\_Report.pdf](http://www2.ametsoc.org/ams/assets/File/publications/BAMS_EEE_2013_Full_Report.pdf)

**Product Type**

Other

**Description**

Lekies, K. 2014. 2014 climate camp evaluation report.

**Product Type**

Other

**Description**

Lekies, K. 2014. 2014 graduate spring webinar series evaluation report.

**Product Type**

Other

**Description**

Lekies, K. 2014. 2014 summer course at Stone Laboratory evaluation report.

**Product Type**

Other

**Description**

USDA-NIFA. 2014. Research team works to sustain corn through weather extremes. USDA National Institute of Food and Agriculture 2014 Impacts Report. [http://nifa.usda.gov/about/pdfs/nifa\\_2014\\_impact\\_rep\\_fnl.pdf](http://nifa.usda.gov/about/pdfs/nifa_2014_impact_rep_fnl.pdf)

**Product Type**

Other

**Description**

Laws, L. Bartelt, and D. Herzmann. 2011+. Sustainablecorn.org website. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. <http://sustainablecorn.org/>

**Product Type**

Other

**Description**

Abendroth, L. and D. Herzmann. 2011+. Internal website. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems.

**Product Type**

Other

**Description**

Rahe, D. (Peter Scharf cited). 2013. Variable rate nitrogen using sensors. Observations in Agriculture Blog. Dec. 15, 2013. <http://daverahe.blogspot.com/2013/12/variable-rate-nitrogen-using-sensors.html>

**Product Type**

Other

**Description**

Rahe, D. (Peter Scharf cited). 2014. Nitrogen sensors revisited. Observations in Agriculture Blog. Jan. 23, 2014. <http://daverahe.blogspot.com/2014/01/nitrogen-sensors-revisited.html>

**Product Type**

Other

**Description**

Rabotyagov, S., C. Kling, P. Gassman, N. Rabalais and R.E. Turner. 2014. Economists must work together with scientists to address the problem of 'dead zones' such as the one in the Gulf of Mexico. The London School of Economics and Political Science (LSE) Blog. Mar. 26, 2014. <http://blogs.lse.ac.uk/usappblog/2014/03/26/economists-must-work-together-with-scientists-to-address-the-problem-of-dead-zones-such-as-the-one-in-the-gulf-of-mexico/>.

**Product Type**

Other

**Description**

Sawyer, J. 2013. Tips for fall nutrient and lime applications. AgriClimate Connection (CSCAP & U2U Blog). Sept. 30, 2013. <http://sustainablecorn.org/blog/?p=341>

**Product Type**

Other

**Description**

Thelen, M. 2014. Farmers weigh in on Nitrogen management in a changing climate. AgriClimate Connection (CSCAP & U2U Blog). Mar. 24, 2014. <http://sustainablecorn.org/blog/?p=465>

**Product Type**

Other

**Description**

Thelen, M. 2014. Web-based corn GDD tool helps farmers with planting decisions. AgriClimate Connection (CSCAP & U2U Blog). May 12, 2014. <http://sustainablecorn.org/blog/?p=490>

**Product Type**

Other

**Description**

Wolkowski, D. 2013. Cover crop observation - Wisconsin. AgriClimate Connection (CSCAP & U2U Blog). Oct. 28, 2013. <http://sustainablecorn.org/blog/?p=348>

**Product Type**

Other

**Description**

Today, D. 2013. Fall crop harvest weather, progress and impacts. AgriClimate Connection (CSCAP & U2U Blog). Oct. 18, 2013. <http://sustainablecorn.org/blog/?p=344>

**Product Type**

Other

**Description**

Today, D. 2013. Drought of 2012-13 – Over or not?. AgriClimate Connection (CSCAP & U2U Blog). Apr. 14, 2014. <http://sustainablecorn.org/blog/?p=175>

**Product Type**

Other

**Description**

Today, D. 2014. Spring/summer outlook and El Nino. AgriClimate Connection (CSCAP & U2U Blog). Jan. 28, 2014. <http://sustainablecorn.org/blog/?p=426>

**Product Type**

Other

**Description**

Today, D. 2014. Corn belt heat into early September. AgriClimate Connection (CSCAP & U2U Blog). Aug. 28, 2014. <http://sustainablecorn.org/blog/?p=592>

**Product Type**

Other

**Description**

Ingels, C. 2014. Decision tools that are useful and usable. AgriClimate Connection (CSCAP & U2U Blog). Feb. 5, 2014. <http://sustainablecorn.org/blog/?p=435>

**Product Type**

Other

**Description**

Ingels, C. 2014. Water chat. AgriClimate Connection (CSCAP & U2U Blog). Mar. 12, 2014. <http://sustainablecorn.org/blog/?p=461>

**Product Type**

Other

**Description**

Ingels, C. 2014. Working for a more Resilient Agriculture. AgriClimate Connection (CSCAP & U2U Blog). June 13, 2014. <http://sustainablecorn.org/blog/?p=505>

**Product Type**

Other

**Description**

Ingels, C. 2014. Climate camp 2014. AgriClimate Connection (CSCAP & U2U Blog). June 30, 2014.  
<http://sustainablecorn.org/blog/?p=531>

**Product Type**

Other

**Description**

Ingels, C. 2014. Trying for a more resilient farming. AgriClimate Connection (CSCAP & U2U Blog). July 09, 2014.  
<http://sustainablecorn.org/blog/?p=549>

**Product Type**

Other

**Description**

Ingels, C. 2014. There's still time to collect samples for the cornstalk nitrate nitrogen test. AgriClimate Connection (CSCAP & U2U Blog). Oct. 29, 2014. <http://sustainablecorn.org/blog/?p=609>

**Product Type**

Other

**Description**

Today, D. 2014. Climate camp 2014. AgriClimate Connection (CSCAP & U2U Blog). July 25, 2014.  
<http://sustainablecorn.org/blog/?p=580>

**Product Type**

Other

**Description**

Laws, L. 2014. Corn belt farmer perspectives on climate and Ag summarized in new report. AgriClimate Connection (CSCAP & U2U Blog). Jan. 21, 2014. <http://sustainablecorn.org/blog/?p=417>

**Product Type**

Other

**Description**

Laws, L. 2014. State nutrient reduction strategy: Information Midwestern farmers can use. AgriClimate Connection (CSCAP & U2U Blog). Feb. 10, 2014. <http://sustainablecorn.org/blog/?p=448>

**Product Type**

Other

**Description**

McGinity, M. 2014. Suggestions for young farmers?. AgriClimate Connection (CSCAP & U2U Blog). Apr. 11, 2014.  
<http://sustainablecorn.org/blog/?p=484>

**Product Type**

Other

**Description**

[Anonymous Press]. 2014. Resilient agriculture conference. U2U - Useful to Usable blog. July 21, 2014.  
<https://mygeohub.org/groups/u2u>

**Product Type**

Other

**Description**

Laws, L., M. Prokopy, and J. Kriva. 2013+. AgriClimate connection. AgriClimate Connection (CSCAP & U2U Blog). <http://sustainablecorn.org/blog/>

**Product Type**

Other

**Description**

[Anonymous] (Cruse interviewed). 2014. Erosion estimated to cost Iowa \$1 Billion in yield. Des Moines Register. May 3, 2014. <http://www.desmoinesregister.com/search/cruse%20soil%20erosion/>

**Product Type**

Other

**Description**

Robinson, K. (Frankenberger and Bowling cited). 2014. Purdue team aims to increase agricultural resilience amid climate change. Purdue University News. May 7, 2014. <http://www.purdue.edu/newsroom/releases/2014/Q2/purdue-team-aims-to-increase-agricultural-resilience-amid-climate-change.html>

**Product Type**

Other

**Description**

Kladivko, E 2013. Cover crop seeding into standing crops or after harvest?. Conservation Cropping System Initiative. Sept. 11, 2013. <http://ccsin.iaswcd.org/?p=624>

**Product Type**

Other

**Description**

Potter, B. (Eileen Kladivko cited). 2014. Climate change research is all wet. AgWeb. Farm Journal, Inc. May 22, 2014.

**Product Type**

Other

**Description**

Robinson, K. (Eileen Kladivko cited). 2014. Purdue team aims to increase agricultural resilience amid climate change. CropLife. May 7, 2014. [http://www.croplife.com/management/purdue-team-aims-to-increase-agricultural-resilience-amid-climate-change/?utm\\_source=knowledge&utm\\_medium=newsletter&utm\\_campaign=clenews%2005142014](http://www.croplife.com/management/purdue-team-aims-to-increase-agricultural-resilience-amid-climate-change/?utm_source=knowledge&utm_medium=newsletter&utm_campaign=clenews%2005142014).

**Product Type**

Other

**Description**

Boyles, P. (Eileen Kladivko and Peter Scharf were cited). 2014. Soil health partnership helps farmers focus on soil. Ag Professional, Vance Publishing Corporation. Feb. 6, 2014. <http://www.extension.org/pages/70340/polar-vortex-california-drought-alaskan-heat-wave-climate-change:-whats-with-the-weird-weather#.U1ldefldV8F>

**Product Type**

Other

**Description**

[Anonymous Press] (Eileen Kladivko cited). 2014. Purdue team aims to increase ag resilience amid climate change. Feedstuffs FoodLink, iNet Solutions Group. May 10, 2014. <http://feedstuffsfoodlink.com/story->

purdue-team-aims-increase-ag-resilience-amid-climate-change-0-112327

**Product Type**

Other

**Description**

[Anonymous Press] (Eileen Kladvko cited). 2014. Fertilizer institute: Cover crops gaining popularity. Wallace Farmer. Oct. 14, 2014. [http://farmprogress.com/story-fertilizer-institute-cover-crops-gaining-popularity-improving-farm-sustainability-8-118927-nl\\_3\\_nlr\\_13?utm\\_source=newsletter&utm\\_medium=email&utm\\_campaign=14+October+2014](http://farmprogress.com/story-fertilizer-institute-cover-crops-gaining-popularity-improving-farm-sustainability-8-118927-nl_3_nlr_13?utm_source=newsletter&utm_medium=email&utm_campaign=14+October+2014).

**Product Type**

Other

**Description**

[Anonymous Press] (Eileen Kladvko cited). 2014. Research reviews cover crops' ability to improve Ag resiliency. Wallaces Farmer. May 12, 2014. [http://farmprogress.com/story-research-reviews-cover-crops-ability-improve-ag-resiliency-8-112374-nl\\_3\\_nlr\\_13?utm\\_source=newsletter&utm\\_medium=email&utm\\_campaign=13+May+2014](http://farmprogress.com/story-research-reviews-cover-crops-ability-improve-ag-resiliency-8-112374-nl_3_nlr_13?utm_source=newsletter&utm_medium=email&utm_campaign=13+May+2014).

**Product Type**

Other

**Description**

Knutson, J. (Joe Lauer cited). 2013. Just beans and corn: Two-crop rotation has pros and cons. AgWeek, Forum Communications Company. Dec. 3, 2013. [http://www.agweek.com/event/article/id/22178/publisher\\_ID/80/](http://www.agweek.com/event/article/id/22178/publisher_ID/80/)

**Product Type**

Other

**Description**

Pocock, J. (Peter Scharf cited). 2014. Nitrogen adjustment. Progressive Farmer. Feb. 2014. [http://dtnpf-digital.com/article/Nitrogen\\_Adjustment/1612322/192535/article.html](http://dtnpf-digital.com/article/Nitrogen_Adjustment/1612322/192535/article.html)

**Product Type**

Other

**Description**

[Anonymous Press] (Peter Scharf cited). 2014. Crop sensors improve nitrogen application. Iowa Corn Stalk. Oct. 22, 2014. <http://www.iowacornstalk.com/2014/10/crop-sensors-improve-nitrogen.html>

**Product Type**

Other

**Description**

Herrold, B. (Peter Scharf cited). 2014. Nitrogen plan among early planting decisions. Missouri Farmer Today. Feb. 27, 2014. [http://www.missourifarmertoday.com/news/crop/nitrogen-plan-among-early-planting-decisions/article\\_83dce9e0-9f1e-11e3-a725-001a4bcf887a.html](http://www.missourifarmertoday.com/news/crop/nitrogen-plan-among-early-planting-decisions/article_83dce9e0-9f1e-11e3-a725-001a4bcf887a.html)

**Product Type**

Other

**Description**

[Anonymous Press] (Peter Scharf cited). 2014. Crop sensors improve nitrogen application. High Plains Journal. Sept. 8, 2014. [http://www.hpj.com/archives/2014./sep14/sep8/0902CropSensorsNitrogenrt1pix.cfm#.VEgcA\\_nF98E](http://www.hpj.com/archives/2014./sep14/sep8/0902CropSensorsNitrogenrt1pix.cfm#.VEgcA_nF98E)

**Product Type**

Other

**Description**

[Anonymous Press] (Peter Scharf cited). 2014. Crop sensors improve nitrogen application. Bolivar Herald. Sept. 4, 2014.

**Product Type**

Other

**Description**

Olson, J. (Peter Scharf cited). 2014. Changing weather patterns impact nitrogen management. Missouri Ruralist. Feb. 6, 2014. <http://farmprogress.com/story-changing-weather-patterns-impact-nitrogen-management-14-108581>

**Product Type**

Other

**Description**

[Anonymous Press] (Peter Scharf cited). 2014. Crop sensors improve nitrogen application. Missouri Ruralist. Sept. 2, 2014. <http://farmprogress.com/story-using-crop-sensors-detect-nitrogen-levels-corn-9-117112>

**Product Type**

Other

**Description**

Harris, T. (Peter Scharf cited). 2014. Wetter springs change nitrogen application. Farm Progress. Feb. 2014. <http://plantsci.missouri.edu/nutrientmanagement/nitrogen/Nitrogen%20loss%20articles/Wetter%20Springs%20Change%20Nitrogen%20Application.pdf>

**Product Type**

Other

**Description**

Johansen, J. (Peter Scharf cited). 2014. Crop sensors improve nitrogen application. AgWired. Sept. 2, 2014. <http://precision.agwired.com/2014./09/02/crop-sensors-improve-nitrogen-application/>

**Product Type**

Other

**Description**

Geist, L. (Peter Scharf cited). 2014. Crop sensors improve nitrogen application. University of Missouri Press Release. Aug. 29, 2014. <http://extension.missouri.edu/n/2323>

**Product Type**

Other

**Description**

Pocock, J. (Peter Scharf cited). 2013. Regain lost yield potential. Progressive Farmer. Winter 2013.. [http://dtnpf-digital.com/article/Regain\\_Lost\\_Yield\\_Potential\\_/1595536/190033/article.html](http://dtnpf-digital.com/article/Regain_Lost_Yield_Potential_/1595536/190033/article.html)

**Product Type**

Other

**Description**

[Anonymous Press] (Matthew Helmers cited). 2013. Iowa state scientists team up to keep nitrates on fields. Clean Water Iowa. Iowa Department of Agriculture & Land Stewardship. Dec. 3, 2013. <http://www.cleanwateriowa.org/article.aspx?id=31&iowa+State+Scientists+Team+Up+to+Keep+Nitrates+on+Fields+%7C+ISU+College+of+Agriculture+%26amp%3B+Life+Sciences>

**Product Type**

Other

**Description**

Helmers, M 2013. Scientists team up to keep nitrates out of rivers. Drainage Contractor. Dec. 5, 2013. <http://www.drainagecontractor.com/industry-news/scientists-team-up-to-keep-nitrates-out-of-rivers>

**Product Type**

Other

**Description**

[Anonymous Press] (Matthew Helmerts cited). 2013. Scientists team up to keep nitrates on fields. Drainage Contractor Magazine Online, Annex Business Media. Dec. 5, 2013. <http://www.drainagecontractor.com/industry-news/scientists-team-up-to-keep-nitrates-out-of-rivers>

**Product Type**

Other

**Description**

Helmerts, M 2013.Keeping nitrates on the field.Farm Talk. Dec. 10, 2013.

**Product Type**

Other

**Description**

[Anonymous Press] (Matthew Helmerts cited). 2013. Iowa state scientists team up to keep nitrates on fields. Ag Professionals. Dec. 4, 2013. <http://www.agprofessional.com/news/iowa-State-scientists-team-up-to-keep-nitrates-on-fields-234491411.html>

**Product Type**

Other

**Description**

[Anonymous Press] (Matthew Helmerts cited). 2013. Iowa state team studies runoff solutions. Agri-View. Dec. 18, 2013. [http://www.agriview.com/news/crop/iowa-state-team-studies-runoff-solutions/article\\_ac82f0cc-4f94-5516-87f2-0c5400f6ac07.html?comment\\_form=true](http://www.agriview.com/news/crop/iowa-state-team-studies-runoff-solutions/article_ac82f0cc-4f94-5516-87f2-0c5400f6ac07.html?comment_form=true)

**Product Type**

Other

**Description**

Helmerts, M. and E. Adcock 2013. Iowa State scientists team up to keep nitrates on fields. Iowa State University.College of Agriculture and Life Sciences. Dec. 3, 2013. <http://www.cals.iastate.edu/news/releases/iowa-state-scientists-team-keep-nitrates-fields>

**Product Type**

Other

**Description**

Deaver, C. (Matthew Helmerts cited). 2013. Scientists promote strategies to keep nitrates out of water systems. Iowa State Daily. Dec. 13, 2013. [http://www.iowastatedaily.com/news/article\\_7d34a8b0-6370-11e3-8f62-001a4bcf887a.html](http://www.iowastatedaily.com/news/article_7d34a8b0-6370-11e3-8f62-001a4bcf887a.html)

**Product Type**

Other

**Description**

[Anonymous Press] (Matthew Helmerts cited). 2013. Iowa State scientists team up to keep nitrates on fields. Iowa State University College of Agriculture and Life Sciences News.Iowa State University of Science and Technology. Dec. 3, 2013. <https://www.cals.iastate.edu/news/releases/iowa-state-scientists-team-keep->



nitrates-fields

**Product Type**

Other

**Description**

Mueller, D., J. Benning and L. Laws 2013. Revisions in corn field guide reduce uncertainty. Iowa State University Extension and Outreach. Nov. 22, 2013. <http://www.extension.iastate.edu/article/revisions-corn-field-guide-reduce-uncertainty>

**Product Type**

Other

**Description**

Gray, P. (Darin Eastburn cited). 2014. Study: Cover crops can ward off soybean diseases. Harvest Public Media, Filed Notes. Jan. 8, 2014. [http://harvestpublicmedia.org/content/study-cover-crops-can-ward-soybean-diseases#.U1lxQ\\_IdV8G](http://harvestpublicmedia.org/content/study-cover-crops-can-ward-soybean-diseases#.U1lxQ_IdV8G)

**Product Type**

Other

**Description**

Herzmann, D. and W. Klein 2013. Iowa environmental mesonet data used by thousands every day. Iowa State University Extension and Outreach. Sept. 30, 2014. <http://www.extension.iastate.edu/article/iowa-environmental-mesonet-data-used-thousands-every-day>

**Product Type**

Other

**Description**

Arbuckle, J.G 2013. Agriculture: Survey shows slow erosion of climate change skepticism among Iowa farmers. ClimateWire. Nov. 8, 2013. <http://www.eenews.net/cw/2013/11/08>

**Product Type**

Other

**Description**

[Anonymous Press] (J. Arbuckle cited). 2013. Farm poll examines climate change and agriculture. Post-Bulletin. Nov. 22, 2013. [http://www.postbulletin.com/archives/farm-poll-examines-climate-change-and-agriculture/article\\_6ebf89aa-f56f-5123-9596-fe2739cbb2b0.html](http://www.postbulletin.com/archives/farm-poll-examines-climate-change-and-agriculture/article_6ebf89aa-f56f-5123-9596-fe2739cbb2b0.html)

**Product Type**

Other

**Description**

Arbuckle, J, G. and D. Looker 2013. Shifting farmer views on climate change. Agriculture.com News. Oct. 25, 2013. [http://www.agriculture.com/news/crops/shifting-farmer-views-on-climate-chge\\_2-ar34803](http://www.agriculture.com/news/crops/shifting-farmer-views-on-climate-chge_2-ar34803)

**Product Type**

Other

**Description**

[Anonymous Press] 2014. Landlords seek cover crops?. Corn and Soybean Digest. July 30, 2014. <http://cornandsoybeandigest.com/conservation/landlords-seek-cover-crops?page=2>

**Product Type**

Other

**Description**

[Anonymous Press] (Project website cited). 2014. Corn belt farmer perspectives on climate, ag summarized in new report. Missouri Valley News. Jan 31, 2014. <http://www.enterprisepub>

com/movalley/news/agriculture/corn-belt-farmer-perspectives-on-climate-ag-summarized-in-new/article\_41f6f030-8aa5-11e3-a219-0017a43b2370.html

**Product Type**

Other

**Description**

Arbuckle, J. and L. Sternweis 2014. Farm poll: Room for improvement in nutrient management strategies. Ag Annex. July 2014.. <http://www.agannex.com/energy/farm-poll-room-for-improvement-in-nutrient-management-strategies>

**Product Type**

Other

**Description**

Goldenberg, S. (J. Arbuckle cited). 2014. Frame climate change as a food issue, experts say. The Guardian.Guardian News and Media Limited. Apr. 1, 2014. <http://www.theguardian.com/environment/2014./apr/01/climate-change-food-issue-ipcc-report>

**Product Type**

Other

**Description**

Roesch, G 2014. Corn belt farmers respond to climate change. UCS Science Network, Union of Concerned Scientists. Jan. 15, 2014. <http://blog.ucsusa.org/corn-belt-farmers-respond-to-climate-change-375>

**Product Type**

Other

**Description**

Demyer, M. (Lois Morton Journal Article cover story). 2014. Water security and agriculture: The human factor. American Society of Agronomy (ASA). June 06, 2014. <https://www.agronomy.org/science-news/water-security-and-agriculture-human-factor>

**Product Type**

Other

**Description**

Sloan, D 2014. Good options to choose from. The Cedar Rapids Gazette, Gazette Communications. Feb. 2, 2014. <http://thegazette.com/2014./02/02/good-options-to-choose-from/>

**Product Type**

Other

**Description**

Clausen, H. (Dick Wolkowski Cited). 2014. Adapting to change: 'Common-sense' practices can help farmers cope with climate change. The County Today. Jan. 27, 2014. [http://www.thecountrytoday.com/farm/article\\_180046aa-8776-11e3-9758-001a4bcf887a.html](http://www.thecountrytoday.com/farm/article_180046aa-8776-11e3-9758-001a4bcf887a.html)

**Product Type**

Other

**Description**

Wolkowski, D 2014.Resilient Agriculture: Adapting to a changing climate – A conference for farmers, scientists, and Ag. profesionales. Integrated Pest and Crop Management - News and Resources for Wisconsin Agriculture from the University of Wisconsin.Integrated Pest and Crop Management. July 1, 2014. <http://ipcm.wisc.edu/blog/2014./07/resilient-agriculture-adapting-to-a-changing-climate-a-conference-for-farmers-scientists-and-ag-profesionals/>

**Product Type**

Other

**Description**

Thelen, M 2014. Evaluate changes in crop management and get results now; optimize water, carbon and nitrogen cycling to improve yield and minimize environmental impacts. MSU Extension News. Jan. 17, 2014.

[http://msue.anr.msu.edu/news/evaluate\\_changes\\_in\\_crop\\_management\\_and\\_get\\_results\\_now](http://msue.anr.msu.edu/news/evaluate_changes_in_crop_management_and_get_results_now)

**Product Type**

Other

**Description**

Thelen, M 2014. Evaluating weather damaged crops, 3 part series on hail, flood and wind damage. MSU Extension News.

July 26, 2014. [http://msue.anr.msu.edu/news/evaluating\\_hail\\_damaged\\_cropspart\\_1](http://msue.anr.msu.edu/news/evaluating_hail_damaged_cropspart_1)

**Product Type**

Other

**Description**

Thelen, M 2014. Farmer discussion on sustainable corn production practices - MSU researcher seek farmer input on nitrogen management, stover harvest, climate and cover crops. MSU Extension News. Feb. 28, 2014.

[http://msue.anr.msu.edu/news/farmer\\_discussion\\_on\\_sustainable\\_corn\\_production\\_practices](http://msue.anr.msu.edu/news/farmer_discussion_on_sustainable_corn_production_practices)

**Product Type**

Other

**Description**

Project (Cited MSU Extension staff). 2014. Farmer discussion on sustainable corn production practices. Michigan State University Extension, Michigan State University Board of Trustees. Feb. 28, 2014.

[http://msue.anr.msu.edu/news/farmer\\_discussion\\_on\\_sustainable\\_corn\\_production\\_practices](http://msue.anr.msu.edu/news/farmer_discussion_on_sustainable_corn_production_practices)

**Product Type**

Other

**Description**

Peltier, A 2014. Resilient ag conference now open to crop advisors and farmers - Register by July 28th. University of Illinois Extension - Hill and Furrow. University of Illinois at Urbana-Champaign, IL. July 21, 2014.

[http://web.extension.illinois.edu/nwiardc/eb270/entry\\_8783](http://web.extension.illinois.edu/nwiardc/eb270/entry_8783)

**Product Type**

Other

**Description**

Thelen, M 2014. Farmers weigh in on nitrogen management. MSU Extension News. Apr. 18, 2014.

[http://msue.anr.msu.edu/news/farmers\\_weigh\\_in\\_on\\_nitrogen\\_management\\_in\\_a\\_changing\\_climate](http://msue.anr.msu.edu/news/farmers_weigh_in_on_nitrogen_management_in_a_changing_climate)

**Product Type**

Other

**Description**

Thelen, M 2014. Filling in the blanks in a poor corn stand is not a good idea. MSU Extension News. May 30, 2014.

[http://msue.anr.msu.edu/news/filling\\_in\\_the\\_blanks\\_in\\_a\\_poor\\_corn\\_stand\\_is\\_not\\_a\\_good\\_idea](http://msue.anr.msu.edu/news/filling_in_the_blanks_in_a_poor_corn_stand_is_not_a_good_idea)

**Product Type**

Other

**Description**

Thelen, M 2014. Keeping nutrients in the field and out of tile lines. MSU Extension News. July 25, 2014.

[http://msue.anr.msu.edu/news/keeping\\_nutrients\\_in\\_the\\_field\\_and\\_out\\_of\\_tile\\_lines](http://msue.anr.msu.edu/news/keeping_nutrients_in_the_field_and_out_of_tile_lines)

**Product Type**

Other

**Description**

Thelen, M 2014. Planting past Memorial Day - what are the risks?.MSU Extension News. May 22, 2014.  
[http://msue.anr.msu.edu/news/planting\\_corn\\_past\\_memorial\\_day\\_what\\_are\\_the\\_risks](http://msue.anr.msu.edu/news/planting_corn_past_memorial_day_what_are_the_risks)

**Product Type**

Other

**Description**

Thelen, M 2014. Resilient Ag Conference begins August 5 in Ames, Iowa. MSU Extension News. July 25, 2014.  
[http://msue.anr.msu.edu/news/resilient\\_ag\\_conference\\_begins\\_august\\_5\\_in\\_ames\\_iowa](http://msue.anr.msu.edu/news/resilient_ag_conference_begins_august_5_in_ames_iowa)

**Product Type**

Other

**Description**

Thelen, M 2014. Web-based corn GDD tool helps farmers with planting decisions. MSU Extension News. Apr. 24, 2014.  
[http://msue.anr.msu.edu/news/web\\_based\\_corn\\_growing\\_degree\\_day\\_tool\\_helps\\_with\\_planting\\_decisions](http://msue.anr.msu.edu/news/web_based_corn_growing_degree_day_tool_helps_with_planting_decisions)

**Product Type**

Other

**Description**

Thelen, M 2013. Managing fields after what harvest. MSU Extension News. July 25, 2013.  
[http://msue.anr.msu.edu/news/managing\\_fields\\_after\\_wheat\\_harvest](http://msue.anr.msu.edu/news/managing_fields_after_wheat_harvest)

**Product Type**

Other

**Description**

[Anonymous] (Chad Ingels cited). 2013. Bioreactors help reduce fertilizer runoff. Cedar Rapids Gazette. Nov. 26, 2013.  
<http://thegazette.com/searchresults/?search=Bioreactors%20help%20reduce%20fertilizer%20runoff%20>

**Product Type**

Other

**Description**

Casper-Simmet, J. (Chad Ingels and Dick Sloan cited). 2014. Resilient Agriculture Conference coming to Ames in August. AgriNews.com July 22, 2014. [http://www.agrinews.com/news/iowa\\_news/resilient-agriculture-conference-coming-to-ames-in-august/article\\_3acdde39-3017-5903-968e-77884c8d0ced.html](http://www.agrinews.com/news/iowa_news/resilient-agriculture-conference-coming-to-ames-in-august/article_3acdde39-3017-5903-968e-77884c8d0ced.html)

**Product Type**

Other

**Description**

Houghton, D. (Lori Abendroth and Chad Ingels cited). 2014. Reaching for resilience. The Furrow, John Deere Magazine. Nov. 2014. [http://www.deere.com/en\\_US/industry/agriculture/our\\_offerings/furrow/furrow.page](http://www.deere.com/en_US/industry/agriculture/our_offerings/furrow/furrow.page)

**Product Type**

Other

**Description**

Boyles, P. (Chad Ingels interviewed). 2014. Polar vortex, California drought, Alaskan heat wave, climate change: What's with the weird weather?. eXtension. Feb. 14, 2014. <http://www.extension.org/pages/70340/polar-vortex-california-drought-alaskan-heat-wave-climate-change-what-s-with-the-weird-weather#.U1IdefldV8F>

**Product Type**

Other

**Description**

Martin, Z. (Chad Ingels and Matt Helmers cited). 2014. Wood-chip filled trenches filter runoff from fields. Iowa Farmers Today. Dec. 12, 2013. [http://www.iowafarmertoday.com/news/crop/wood-chip-filled-trenches-filter-runoff-from-fields/article\\_8a8b2742-629d-11e3-8610-0019bb2963f4.html](http://www.iowafarmertoday.com/news/crop/wood-chip-filled-trenches-filter-runoff-from-fields/article_8a8b2742-629d-11e3-8610-0019bb2963f4.html)

**Product Type**

Other

**Description**

Caspers-Simmet, J. (Chad Ingels interviewed). 2014. Bioreactor to remove nitrate from tile water. AgriNews. Oct. 3, 2013. [http://www.postbulletin.com/archives/bioreactor-to-remove-nitrate-from-tile-water/article\\_edd216d7-c9b0-523b-a371-c5ac42078a0b.html?mode=jqm](http://www.postbulletin.com/archives/bioreactor-to-remove-nitrate-from-tile-water/article_edd216d7-c9b0-523b-a371-c5ac42078a0b.html?mode=jqm)

**Product Type**

Other

**Description**

Love, O. (Chad Ingels interviewed). 2014. Bioreactors, component of Iowa's nutrient reduction strategy, help reduce fertilizer runoff. Cedar Rapids Gazette. Mar. 29, 2014. <http://thegazette.com/2013/11/26/bioreactors-component-of-iowas-nutrient-reduction-strategy-help-reduce-fertilizer-runoff/>

**Product Type**

Other

**Description**

Edward, L. and D. Todey 2014. Fall blizzards in a changing climate. Agweb. Oct. 30, 2014. [Anonymous Press] (Dennis Todey cited). 2014. Helping farmers adapt to changing growing conditions. Science Daily. Apr. 11, 2014. <http://www.sciencedaily.com/releases/2014/08/140811132257.htm>

**Product Type**

Other

**Description**

[Anonymous Press] (Dennis Todey and Laura Edwards were cited). 2014. New online tools help farmers use climate data. Farm Ranch Guide. Aug. 12, 2014. [http://www.farmandranchguide.com/news/crop/new-online-tools-help-farmers-use-climate-data/article\\_48dbe5f2-2179-11e4-af18-001a4bcf887a.html](http://www.farmandranchguide.com/news/crop/new-online-tools-help-farmers-use-climate-data/article_48dbe5f2-2179-11e4-af18-001a4bcf887a.html)

**Product Type**

Other

**Description**

Robinson, K. (Eileen Kladvko cited). 2014. Purdue, OSU assisting in ag meeting for corn belt farmers. FeedLot, FeedLot Magazine. Aug. 2, 2014. <http://feedlotmagazine.com/events/purdue-osu-assisting-in-ag-meeting-for-corn-belt-farmers/>

**Product Type**

Other

**Description**

Robinson, K. (Eileen Kladvko cited). 2014. Purdue, OSU assist in meeting. Morning Ag Clips. Morning Ag Clips, LLC. July 6, 2014. <https://www.morningagclips.com/purdue-osu-assist-in-meeting/>

**Product Type**

Other

**Description**

Robinson, K. (Eileen Kladvko cited). 2014. Purdue, OSU assisting in ag meeting for corn belt farmers. Ag Answers, A partnership of Purdue University and The Ohio State University. July 25, 2014. <https://ag.purdue>

edu/aganswers/Pages/archive.aspx?story=661#.U\_tvqvmwLYi

**Product Type**

Other

**Description**

Laws, L. (news release) (J. Arbuckle, Lois Wright Morton and Jamie Benning cited). 2014. Corn belt farmer perspectives on climate and agriculture summarized in new report. The Mapleton Press, Washington County Enterprise and Pilot Tribune. Jan. 31, 2014. [http://m.enterprisepub.com/mobile/mapleton/news/corn-belt-farmer-perspectives-on-climate-and-agriculture-summarized-in/article\\_3a78dc08-8a85-11e3-ae3c-001a4bcf6878.html](http://m.enterprisepub.com/mobile/mapleton/news/corn-belt-farmer-perspectives-on-climate-and-agriculture-summarized-in/article_3a78dc08-8a85-11e3-ae3c-001a4bcf6878.html)

**Product Type**

Other

**Description**

[Anonymous Press] (J. Arbuckle, Jamie Benning and Lois Wright Morton cited). 2014. Weathering the weather: Grain farmers respond. National Hog Farmer. Jan. 15, 2014. <http://nationalhogfarmer.com/business/weathering-weather-grain-farmers-respond>

**Product Type**

Other

**Description**

Laws, L. (news release) (J. Arbuckle and Lois Wright Morton cited). 2014. Corn Belt farmer perspectives on climate and agriculture summarized in new report. Agri-View. Jan. 25, 2014. [http://www.agriview.com/briefs/crop/corn-belt-farmer-perspectives-on-climate-and-agriculture-summarized-in/article\\_3498c4b7-aadb-5fed-869c-e92ae3d01319.html](http://www.agriview.com/briefs/crop/corn-belt-farmer-perspectives-on-climate-and-agriculture-summarized-in/article_3498c4b7-aadb-5fed-869c-e92ae3d01319.html)

**Product Type**

Other

**Description**

Laws, L. (news release) (J. Arbuckle cited). 2014. Corn belt farmer perspectives on climate and agriculture summarized in new report. Iowa State University, College of Ag and Life Science, News Release. Jan. 10, 2014. <http://www.cals.iastate.edu/news/releases/corn-belt-farmer-perspectives-climate-and-agriculture-summarized-new-report>

**Product Type**

Other

**Description**

[Anonymous Press] (Dick Wolkowski cited). 2014. Climate change conference for farmers, scientists and others. Agri-View, Madison, WI. July 13, 2014. [http://www.agriview.com/briefs/crop/climate-change-conference-for-farmers-scientists-and-others/article\\_c2d9f06c-da52-519c-b839-a53c4f44f4b2.html](http://www.agriview.com/briefs/crop/climate-change-conference-for-farmers-scientists-and-others/article_c2d9f06c-da52-519c-b839-a53c4f44f4b2.html)

**Product Type**

Other

**Description**

Abendroth, L 2014. Make agriculture more resilient. Wallaces Farmer. July 1, 2014. <http://magissues.farmprogress.com/WAL/WF07Jul14/wal025.pdf>

**Product Type**

Other

**Description**

Gerhold, D. (Lori Abendroth, Lynn Laws and Linda Geiger cited). 2014. Project seeks new agricultural systems to prepare for climate change. Iowa State Daily. Feb. 4, 2014. [http://www.iowastatedaily.com/news/article\\_242ac938-8d2e-11e3-bee7-0019bb2963f4.html](http://www.iowastatedaily.com/news/article_242ac938-8d2e-11e3-bee7-0019bb2963f4.html)

**Product Type**

Other

**Description**

Deaver, C. (Matt Helmers cited). 2013. Scientists promote strategies to keep nitrates out of water systems. BC Water News, Brown and Caldwell. Dec. 17, 2013. <http://www.bcwaternews.com/bcwn/GreatLakes/121713.html>

**Product Type**

Other

**Description**

Laws, L (news release). 2013. Iowa state scientists team up to keep nitrates on fields. TinyKnowledge.com. Dec. 8, 2013. <http://www.tinyknowledge.com> (updated daily)

**Product Type**

Other

**Description**

Laws, L (news release). 2013. Iowa state scientists team up to keep nitrates on fields. InsideView. Dec. 4, 2013. <http://www.insideview.com> (updated daily)

**Product Type**

Other

**Description**

Laws, L (news release). 2013. Iowa state scientists team up to keep nitrates on fields. Northern California Agriculture News. Dec. 6, 2013. <http://norcalagblog.com/scientists-team-keep-nitrates-fields-water/>

**Product Type**

Other

**Description**

Laws, L (news release). 2013. Iowa state scientists team up to keep nitrates on fields. Agriculture Industry Today by EIN Newsdesk, IPD Group, Inc. Dec. 5, 2013. <http://www.agriculture.einnews.com> (updated daily)

**Product Type**

Other

**Description**

[Anonymous Press]. 2014. Conference: Resilient agriculture: Adapting to a changing climate. FARMD, Forum for Agricultural Risk Management in Development. Aug. 2, 2014. <https://www.agriskmanagementforum.org/event/conference-resilient-agriculture-adapting-changing-climate>

**Product Type**

Other

**Description**

[Anonymous Press]. 2014. Purdue, OSU assist in meeting. Morning Ag Clips. Morning Ag Clips, LLC. June 29, 2014. <https://www.morningagclips.com/purdue-osu-assisting-in-ag-meeting/>

**Product Type**

Other

**Description**

Winsor, S 2014. Less time for planting. Corn and Soybean Digest, Penton. Apr. 13, 2014. [http://cornandsoybeandigest.com/corn/less-time-planting?NL=SO-01&Issue=SO-01\\_2014.0414\\_SO-01\\_459&YM\\_RID=labend@iastate.edu&YM\\_MID=1460335&sfvc4enews=42&cl=article\\_3](http://cornandsoybeandigest.com/corn/less-time-planting?NL=SO-01&Issue=SO-01_2014.0414_SO-01_459&YM_RID=labend@iastate.edu&YM_MID=1460335&sfvc4enews=42&cl=article_3)

**Product Type**

Other

**Description**

Taylor, A.J 2014. Vilsack to speak to Corn belt farmers August 5th. KLOW Mix 107.3. North Iowa Broadcasting, Inc. Coloff Media, LLC. July 31, 2014. <http://kiow.com/2014/07/31/vilsack-to-speak-to-corn-belt-farmers-august-5th/>

**Product Type**

Other

**Description**

The Gazette Editorial Board. 2014. A strategy for 'nutrient reduction'. The Cedar Rapids Gazette, Gazette Communications. Feb. 2, 2014.

**Product Type**

Other

**Description**

Block, T 2014. Farmers see economic gains in conservation practices. Spokesman, Iowa Farm Bureau. Aug. 13, 2014.

**Product Type**

Other

**Description**

Moore, P 2014. Important farm research taking place at north Appalachian experimental watershed. The Holmes County Bargain Hunter, Graphic Publications, Inc. Jan. 27, 2014.

**Product Type**

Other

**Description**

Zingula, C 2014. No 'easy street' for farmers. The Cedar Rapids Gazette, Gazette Communications. Feb. 2, 2014.

**Product Type**

Other

**Description**

[Anonymous Press]. 2014. Resilient Agriculture: Adapting to a changing climate. National Sustainable Agriculture Information Service, The National Center for Appropriate Technology. July 21, 2014.

**Product Type**

Other

**Description**

[Anonymous Press]. 2014. Resilient Agriculture: Adapting to a changing climate. Soil and Water Conservation Society. July 21, 2014.

**Product Type**

Other

**Description**

Herrera, A. 2014. Resilient Agriculture Conference on August 5-7. Climate Adaptation Mitigation E-Learning, CAMEL. Aug. 1, 2014.  
<http://www.camelclimatechange.org/view/presentation/53dbf77d0cf2541de6d02761/?topic=51cbfc8ef702fc2ba812d44e>



**Product Type**

Other

**Description**

[Anonymous Press]. 2014. Resilient Agriculture Conference open to CCAs. Ag Professional, Vance Publishing Corporation. July 22, 2014. <http://www.agprofessional.com/news/Resilient-Agriculture-Conference-now-open-to-crop-advisors-268156862.html>

**Product Type**

Other

**Description**

[Anonymous Press]. 2014. USDA Corn Conference now open to crop advisors and farmers. Farmers Hot Line, Heartland Communications Group, Inc. July 29, 2014. <http://www.farmershotline.com/stories/usda-corn-conference-now-open-crop-advisors-and-farmers>

**Product Type**

Other

**Description**

Laws, L. (news release). 2014. Corn conference now open to crop advisers and farmers. Agri-View, Madison, WI. July 21, 2014. [http://www.agriview.com/briefs/crop/corn-conference-now-open-to-crop-advisers-and-farmers/article\\_db5d1ad8-0840-5703-9231-39c24ff55111.html](http://www.agriview.com/briefs/crop/corn-conference-now-open-to-crop-advisers-and-farmers/article_db5d1ad8-0840-5703-9231-39c24ff55111.html)

**Product Type**

Other

**Description**

[Anonymous Press]. 2014. Resilient Agriculture meeting for corn belt farmers to be held. Agri-View, Madison, WI. July 2, 2014. [http://www.agriview.com/briefs/crop/resilient-agriculture-meeting-for-corn-belt-farmers-to-be-held/article\\_2a9fda95-1747-50c1-a4b7-8845d2340a63.html](http://www.agriview.com/briefs/crop/resilient-agriculture-meeting-for-corn-belt-farmers-to-be-held/article_2a9fda95-1747-50c1-a4b7-8845d2340a63.html)

**Product Type**

Other

**Description**

Laws, L. (news release)(J. Arbuckle and Projectwebsite cited). 2014. Corn belt farmer perspectives on climate and agriculture summarized in new report. Enterprise Online. Jan. 31, 2014. [http://m.enterprisepub.com/mobile/mapleton/news/corn-belt-farmer-perspectives-on-climate-and-agriculture-summarized-in/article\\_3a78dc08-8a85-11e3-ae3c-001a4bcf6878.html](http://m.enterprisepub.com/mobile/mapleton/news/corn-belt-farmer-perspectives-on-climate-and-agriculture-summarized-in/article_3a78dc08-8a85-11e3-ae3c-001a4bcf6878.html)

**Product Type**

Other

**Description**

[Anonymous Press]. 2014. Resilient Agriculture Conference. Practical Farmers of Iowa. July 7, 2014. <http://practicalfarmers.org/news-events/events/>

**Product Type**

Other

**Description**

[Anonymous Press]. 2014. Resilient Agriculture: Adapting to a changing climate. Women Caring For the Land. Women, Food, and Agriculture Network. July 21, 2014. [http://womencaringfortheland.org/blog/ai1ec\\_event/resilient-agriculture-adapting-to-a-changing-climate/?instance\\_id=](http://womencaringfortheland.org/blog/ai1ec_event/resilient-agriculture-adapting-to-a-changing-climate/?instance_id=)

**Product Type**

Other

**Description**

[Anonymous Press]. 2014. USDA, 25x'25 Announce Resilient Agriculture Conference. AgriMarketing.com, Henderson Communications, LLC. July 24, 2014. <http://www.agrimarketing.com/s/90211>

**Product Type**

Other

**Description**

Tevis, C 2014. Vilsack: Farmers urged to support sustainable farming. agriculture.com. Aug. 06, 2014. [http://www.agriculture.com/news/crops/vilsack-farmers-urged-to-suppt\\_2-ar44605](http://www.agriculture.com/news/crops/vilsack-farmers-urged-to-suppt_2-ar44605)

**Product Type**

Other

**Description**

Laws, L (news release). 2014. USDA Corn Conference now open to crop advisors and farmers. The Mapleton Press, Washington County Enterprise and Pilot Tribune. July 24, 2014. [http://www.enterprisepub.com/mapleton/news/usda-corn-conference-now-open-to-crop-advisors-and-farmers/article\\_98eba184-1343-11e4-b12f-0017a43b2370.html](http://www.enterprisepub.com/mapleton/news/usda-corn-conference-now-open-to-crop-advisors-and-farmers/article_98eba184-1343-11e4-b12f-0017a43b2370.html)

**Product Type**

Other

**Description**

[Anonymous Press]. 2014. USDA Corn Conference now open to crop advisors and farmers. Missouri Valley Times News, Washington County Enterprise and Pilot Tribune. July 23, 2014. [http://www.enterprisepub.com/movalley/news/agriculture/usda-corn-conference-open-to-crop-advisors-farmers/article\\_f205a622-12b0-11e4-8ac0-0017a43b2370.html](http://www.enterprisepub.com/movalley/news/agriculture/usda-corn-conference-open-to-crop-advisors-farmers/article_f205a622-12b0-11e4-8ac0-0017a43b2370.html)

**Product Type**

Other

**Description**

[Anonymous Press]. 2014. USDA - Resilient Agriculture Conference now open to crop advisors - CCA certification credits available. SeedQuest. July 21, 2014. [http://www.seedquest.com/news.php?type=news&id\\_article=51318&id\\_region=&id\\_category=&id\\_crop=](http://www.seedquest.com/news.php?type=news&id_article=51318&id_region=&id_category=&id_crop=)

**Product Type**

Other

**Description**

25x'25. 2014. Corn farmers help lead adaptive management discussions at Resilient Agriculture Conference. 25x'25 REsource, 25x'25 Alliance. Aug. 8, 2014. <http://25x25blog.org/corn-farmers-help-lead-adaptive-management-discussions-at-resilient-agriculture-conference/>

**Product Type**

Other

**Description**

Harker, J 2014. New agriculture climate alliance. Brownfield Ag News for America. Brownfield Ag News. Sept. 24, 2014. <http://brownfieldagnews.com/2014./09/24/new-agriculture-climate-alliance/>

**Product Type**

Other

**Description**

Abendroth, A., L. Laws and G. Wallace 2014. Resilient Ag conference now open to crop advisers and farmers. Iowa State University Extension and Outreach. July 22, 2014. <http://www.extension.iastate>

edu/article/resilient-ag-conference-now-open-crop-advisers-and-farmers

**Product Type**

Other

**Description**

Laws, L. (news release). 2014. Resilient Ag Conference now open to ag advisors and farmers: CCA certification credits available. Iowa State University Extension and Outreach, Iowa State University. July 25, 2014. <http://www.growers-edge.com/showcontrol.aspx?mid=4933>

**Product Type**

Other

**Description**

Laws, L. 2014. Resilient Ag conference now open to crop advisers and farmers. Iowa State University Extension and Outreach. July 22, 2014. <http://www.extension.iastate.edu/CropNews/2014./0725LLaws.htm>

**Product Type**

Other

**Description**

Abendroth, L. and L. Laws 2014. Resilient Ag Conference now open to ag advisors and farmers: CCA certification credits available. Integrated Pest and Crop Management - News and Resources for Wisconsin Agriculture from the University of Wisconsin. July 23, 2014. <http://ipcm.wisc.edu/blog/2014./07/resilient-ag-conference-now-open-to-crop-advisors-and-farmers-cca-certification-credits-available/>

**Product Type**

Other

**Description**

Laws, L. (news release). 2014. Resilient Ag Conference now open to ag advisors and farmers: CCA certification credits available. Marquette County, University of Wisconsin-Extension. July 23, 2014. <http://marquette.uwex.edu/agriculture>

**Product Type**

Other

**Description**

Laws, L. (news release). 2014. Resilient Ag Conference now open to ag advisors and farmers: CCA certification credits available. Pierce County, University of Wisconsin-Extension. July 23, 2014. <http://pierce.uwex.edu/agriculture>

**Product Type**

Other

**Description**

Laws, L. (news release). 2014. Resilient Ag Conference now open to ag advisors and farmers: CCA certification credits available. Vernon County, University of Wisconsin-Extension. July 23, 2014. <http://vernon.uwex.edu/agriculture>

**Product Type**

Other

**Description**

Laws, L. (news release). 2014. Resilient Ag Conference now open to ag advisors and farmers: CCA certification credits available. Barron County, University of Wisconsin-Extension. July 23, 2014. <http://barron.uwex.edu/agriculture>

**Product Type**

Other

**Description**

Laws, L. (news release). 2014. Resilient Ag Conference now open to ag advisors and farmers: CCA certification credits available. Calumet County, University of Wisconsin-Extension. July 23, 2014. <http://calumet.uwex.edu/agriculture>

**Product Type**

Other

**Description**

[Anonymous Press]. 2014. Resilient Agriculture: Adapting to a changing climate. Leopold Center for Sustainable Agriculture, Iowa State University College of Agriculture and Life Sciences. Aug. 5, 2014. <http://www.leopold.iastate.edu/news/calendar/2014.-08-05/resilient-agriculture-adapting-changing-climate>

**Product Type**

Other

**Description**

Laws, L. (news release). 2014. Resilient Ag conference now open to crop advisors and farmers. CropWatch, University of Nebraska-Lincoln. July 24, 2014. [https://cropwatch.unl.edu/corn/-/asset\\_publisher/z8AkAVDcRycd/content/resilient-ag-conference-now-open-to-crop-advisors-and-farmers](https://cropwatch.unl.edu/corn/-/asset_publisher/z8AkAVDcRycd/content/resilient-ag-conference-now-open-to-crop-advisors-and-farmers)

**Product Type**

Other

**Description**

[Anonymous Press]. 2014. Resilient Agriculture Conference @ Iowa. iGrow, South Dakota State University. Aug. 5, 2014.

**Product Type**

Other

**Description**

Laws, L 2014.USDA to be briefed on research from climate and corn project.ISU College of Ag and Life Sciences Online Newsletter, Iowa State University of Science and Technology. July 14, 2014.

**Product Type**

Other

**Description**

Laws, L 2014.Conference open to crop advisors and farmers. The College of Agriculture and Life Sciences Newsletter, Iowa State University of Science and Technology. July 28, 2014.

**Product Type**

Other

**Description**

[Anonymous Press] (Eileen Kladviko and Lois Wright Morton cited). 2014. Purdue, OSU assist in meeting for corn farmers. AgriNews, LaSalle, IL. July 5, 2014. <http://agrinews-pubs.com/Content/News/MoneyNews/Article/Purdue--OSU-assist-in-meeting-for-corn-farmers-/8/27/10730>

**Product Type**

Other

**Description**

[Anonymous Press] (Lois Wright Morton cited). 2014. Iowa State University faculty contribute to national climate assessment. Agriculture Industry News, Net Mainstream Media EC. May 6, 2014. <http://www.industriesnews.net/story?sid=s221730531&cid=14>

**Product Type**

Other

**Description**

Geiling, N. (Lois Wright Morton cited). 2014. Is there such a thing as sustainable corn?.Modern Farmer, Modern Farmer Media. June 4, 2014. <http://modernfarmer.com/2014/06/thing-sustainable-corn/>

**Product Type**

Other

**Description**

Tevis, C. (Lois Wright Morton cited). 2014. Vilsack: Farmers urged to support sustainable farming. Agriculture.com, Meredith Corporation. Aug. 6, 2014. [http://www.agriculture.com/news/crops/vilsack-farmers-urged-to-suppt\\_2-ar44605](http://www.agriculture.com/news/crops/vilsack-farmers-urged-to-suppt_2-ar44605)

**Product Type**

Other

**Description**

Anderson, K. (Lois Wright Morton cited). 2014. NCA3 examines effects of climate change on rural communities. Brownfield Ag News for America.Brownfield Ag News. May 7, 2014. <http://brownfieldagnews.com/2014/05/07/nca3-examines-effects-climate-change-rural-communities/>

**Product Type**

Other

**Description**

Taylor, A.J. (Lois Wright Morton cited). 2014. Meeting for corn belt farmers August 5-7, Iowa State University, Ames, Iowa. KIOW Mix 107.3. North Iowa Broadcasting, Inc. Coloff Media, LLC. July 3, 2014.

**Product Type**

Other

**Description**

[Anonymous Press] (Lois Wright Morton cited). 2014. Iowa State to host meeting of scientists and farmers. AgriMarketing.com, Henderson Communications, LLC. July 3, 2014. <http://www.agrimarketing.com/s/89884>

**Product Type**

Other

**Description**

Laws, L. (news release) (Lois Wright Morton cited). 2014. Iowa State University faculty contribute to national climate assessment. College of Agriculture and Life Sciences News Service, Iowa State University of Science and Technology. May 6, 2014. <http://www.cals.iastate.edu/news/releases/iowa-state-university-faculty-contribute-national-climate-assessment>

**Product Type**

Other

**Description**

[Anonymous Press] (Lois Wright Morton cited). 2014. Iowa State to host meeting of scientists and farmers. Growing Ohio, Growing America. July 7, 2014. <http://growingohio.com/features/2014/07/iowa-state-host-meeting-scientists-and-farmers/>

**Product Type**

Other

**Description**

[Anonymous Press] (Lois Wright Morton cited). 2014. Purdue, OSU to assist at ag meeting for corn belt farmers. Growing Ohio, Growing America. June 30, 2014. <http://growingohio.com/news/2014/06/purdue-osu-assist-ag-meeting-corn-belt-farmers/>

**Product Type**

Other

**Description**

[Anonymous Press] (Lois Wright Morton cited). 2014. Iowa State University faculty contribute to national climate assessment. High Plains/Midwest Ag Journal. High Plains Publishers, Inc. May 19, 2014.

**Product Type**

Other

**Description**

[Anonymous Press] (Lois Wright Morton cited). 2014. Meeting for corn belt farmers is Aug. 5-7 at ISU. GlobeGazette.com, Mason City Globe Gazette. July 2, 2014.

**Product Type**

Other

**Description**

Anderson, K. (Lois Wright Morton cited). 2014. Resilient agriculture: Adapting to a changing climate. Brownfield Ag News for America, Brownfield Ag News. Aug. 6, 2014.

**Product Type**

Audio or Video

**Description**

Lal, R. 2014. Carbon's resiliency role. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Audio or Video

**Description**

Lauer, J. 2014. Cropping Systems Coordinated Agricultural Project: Extended rotations. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Audio or Video

**Description**

Eastburn, D. 2014. Climate change and crop diseases. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Audio or Video

**Description**

Dunbar, M. 2014. Crop insects. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Audio or Video

**Description**

Anex, R. 2014. Nitrogen and its role in agriculture resilience to climate change. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Audio or Video

**Description**

Basso, B. 2014. Predicting the impact of increasing temperatures on corn yield. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Audio or Video

**Description**

Kling, C.L. 2014. Midwestern farmers anticipate and respond to changing change. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Audio or Video

**Description**

Arbuckle, J. 2014. Understanding farmer perspectives on climate change and adaptation to increased weather variability. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Audio or Video

**Description**

Hobbs, J. 2014. Regional water challenges and opportunities to increase crop resilience. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Audio or Video

**Description**

Hatfield, J. 2014. Climate change and agriculture in the United States. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Audio or Video

**Description**

Shea, E. 2014. Agriculture & forestry in a changing climate: Adaptation recommendations. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Audio or Video

**Description**

Sripada, R. 2014. Integrated approach to sustainability. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Audio or Video

**Description**

O'Brien, K. 2014. Encirca Yield-Insight for nitrogen management decisions. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Audio or Video

**Description**

Bradley, P. 2014. Equipment and technology advancements enabling resiliency. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Audio or Video

**Description**

Van Es, H. 2014. Cloud computational tool for precisions nitrogen management. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Audio or Video

**Description**

Muth, D. 2014. Crop decision-making to protect soil and water. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Audio or Video

**Description**

Kadyszewski, J. 2014. Market demand for products with light environmental footprints. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Audio or Video

**Description**

Jackson, M. 2014. International economies and sustainability protocols. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Audio or Video

**Description**

Payne, J. 2014. Keep it for the crop: Sustainability in nutrient management. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Audio or Video

**Description**

Hohenstein, W. 2014. USDA efforts to improve sustainability and resilience in agricultural systems. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Audio or Video

**Description**

Niemeyer, G. 2014. A view of the future from corn and soybean fields: What does long term sustainability and resiliency look like and how do we get there?. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014. <http://www.sustainablecorn.org/Videos/Index.html>



**Product Type**

Audio or Video

**Description**

Foell, L. 2014. A view of the future from corn and soybean fields: What does long term sustainability and resiliency look like and how do we get there?. CSCAP Resilient Agriculture Conference Video, Ames, IA. Aug. 5-7, 2014.  
<http://www.sustainablecorn.org/Videos/Index.html>

**Product Type**

Other

**Description**

Frankenberger, J., L. Abendroth, L. Bowling, L. Brown, N. Fausey, C. Hay, M. Helmers, D. Jaynes, X. Jia, E. Kladvko, K. Nelson, B. Sohngen, J. Strock and M. Youssef. 2014. Managing water for increased resiliency of drained agricultural landscapes. USDA NIFA Water for Agriculture program, Pending, \$4,997,009, Feb. 2015 to Jan. 2020.

**Product Type**

Other

**Description**

Helmers, M. 2014. Water and nutrient research: In-field and offsite strategies. Iowa Department of Agriculture and Land Stewardship, Funded, \$110,204, Jan. 2014 to Dec. 2014.

**Product Type**

Other

**Description**

Villamil MB, RC Bellm, D Bowman, R Higgins, A Peltier, R Cook and ED Nafziger 2013 Agronomic and environmental assessment of cover crops in Illinois. NREC, Funded, \$1,033,060, Jan. 2013 to Dec. 2017.

**Product Type**

Other

**Description**

Sawyer, J. 2013 Investigate practices to improve corn yield in a rye cover crop system. Iowa Department of Agriculture and Land Stewardship, Funded, \$75,000, July 2013 to Dec. 2015.

**Product Type**

Other

**Description**

Strock, et al. 2013 Organic research. CERES Trust.

**Product Type**

Other

**Description**

Strock, et al. 2014. Quantifying hydrologic impacts of drainage under corn production systems in the upper Midwest. Minnesota Corn Growers Association, Funded, \$162,206, 2014.

**Product Type**

Other

**Description**

Archontoulis, S., M. Castellano and F. Miguez. 2012 Cropping system modeling to improve soybean management and yield in Iowa. Iowa Soybean Association, Funded, \$300,000, 2012 to 2014.

**Product Type**

Other

**Description**

Anex, R. and P. Scharf. 2014. Improving life-cycle nitrogen use efficiency and environmental performance of corn production through improved fertilizer timing and rate. USDA-AFRI, Funded, \$473,943, Jan. 2015 to Dec. 2017.

**Product Type**

Other

**Description**

Anex, R. 2013 Cost-effective soil nitrous oxide emission monitoring. USDA Hatch Grant, Funded, \$57,687, Jan. 2014 to Dec. 2015.

**Product Type**

Other

**Description**

Today, D. 2014. USDA climate hub for extension work. \*Climate Hub, 2014. Funded, \$25,000, \*Special circumstance.

**Product Type**

Other

**Description**

Richard, T., R. Moore and N. Nkongolo. 2013. Preparing agriculture and natural resource students to meet the climate change challenge: A modular approach. USDA.

**Product Type**

Other

**Description**

Moore, R. 2013. Impacts of agricultural management practices on watershed residence times and harmful algal blooms in Western Lake Erie. NSF, Water Sustainability and Climate (WSC).

**Product Type**

Other

**Description**

Moore, R. et al. 2014. Water quality trading in Lake Erie and the Great Lakes Region. USDA NIFA, Pending, \$4,699,753, Oct. 2014 to Sept. 2019.

**Product Type**

Data and Research Material

**Description**

Anex, R. 2012+. Collaborations with and receipt of a partial data set from Dr. Shannon Osborne, USDA/ARS, Brookings, SD.

**Product Type**

Other

**Description**

Basche, A. 2014. Group hosting for students from Waterloo High School. Iowa State University, Ames, IA. Apr. 21, 2014.

**Product Type**

Audio or Video

**Description**

Anex, R. 2014. Calibrating decagon 5TE probes (PART 1 of 2). Sustainable Corn YouTube channel. Accessible at <https://www.youtube.com/user/sustainablecorn>. <https://www.youtube.com/watch?v=09aLmgDZ9aM>

**Product Type**

Audio or Video

**Description**

Anex, R. 2014. Making a calibration curve (PART 2 of 2). Sustainable Corn YouTube channel. Accessible at <https://www.youtube.com/user/sustainablecorn>. <https://www.youtube.com/watch?v=qPmjYYHpkEk>

**Product Type**

Audio or Video

**Description**

Basso, B. 2014. Algae blooms in the Great Lakes. Great Lakes Now. July 31, 2014. <http://www.greatlakesnow.org/algae-blooms/> <http://www.greatlakesnow.org/2014/07/food-supply/>

**Product Type**

Audio or Video

**Description**

Wittman, C, and C. Ingels. 2014. End of season cornstalk nitrate testing. YouTube Video published on Oct. 23, 2014. <https://www.youtube.com/watch?v=3ER4ZwyWqG0>

**Product Type**

Audio or Video

**Description**

Helmers, M. 2014. Drainage water management. The Science Behind Climate Change. CSCAP Spring 2014 Webinar Series. Feb. 12, 2014.

**Product Type**

Audio or Video

**Description**

Tyndall, J. 2014. Economics of different land use projects for farmers. The Science Behind Climate Change. CSCAP Spring 2014 Webinar Series. Feb. 26, 2014.

**Product Type**

Audio or Video

**Description**

Takle, G. 2014. Climate change, U.S. commodity production and food security. The Science Behind Climate Change. CSCAP Spring 2014 Webinar Series. Jan. 22, 2014.

**Product Type**

Audio or Video

**Description**

Lamkey, K. 2014. The future of agronomy: A systems perspective. The Science Behind Climate Change. CSCAP Spring 2014 Webinar Series. Jan. 29, 2014.

**Product Type**

Audio or Video

**Description**

Kasper, T. 2014. Cover crops and climate change. The Science Behind Climate Change. CSCAP Spring 2014 Webinar Series. Feb. 5, 2014.

**Product Type**

Audio or Video

**Description**

Bloom, A. 2014. Introduction to climate research. Climate Change: Causes, Consequences and Solutions. CSCAP Fall 2014 Webinar Series. Sept. 29, 2014.

**Product Type**

Audio or Video

**Description**

Bloom, A. 2014. History of Earth's climate. Climate Change: Causes, Consequences and Solutions. CSCAP Fall 2014 Webinar Series. Oct. 6, 2014.

**Product Type**

Audio or Video

**Description**

Bloom, A. 2014. Climate forcing factors. Climate Change: Causes, Consequences and Solutions. CSCAP Fall 2014 Webinar Series. Oct. 13, 2014.

**Product Type**

Audio or Video

**Description**

Bloom, A. 2014. GCMs & predictions. Climate Change: Causes, Consequences and Solutions. CSCAP Fall 2014 Webinar Series. Oct. 20, 2014.

**Product Type**

Audio or Video

**Description**

Bloom, A. 2014. Climate & biosphere. Climate Change: Causes, Consequences and Solutions. CSCAP Fall 2014 Webinar Series. Oct. 27, 2014.

**Product Type**

Audio or Video

**Description**

Bloom, A. 2014. Agriculture and climate. Climate Change: Causes, Consequences and Solutions. CSCAP Fall 2014 Webinar Series. Nov. 3, 2014.

**Product Type**

Audio or Video

**Description**

Bloom, A. 2014. Culture & climate change. Climate Change: Causes, Consequences and Solutions. CSCAP Fall 2014 Webinar Series. Nov. 10, 2014.

**Product Type**

Audio or Video

**Description**

Edwards, L. 2014. Climate science communications. The Science Behind Climate Change. CSCAP Spring 2014 Webinar Series. Feb. 19, 2014.

**Product Type**

Data and Research Material

**Description**

Castellano, M., and R. Anex.2012 (on-going).Multiple collaborations with Dr. Timothy Parkin of ARS NLAE, Ames, IA.

**Product Type**

Data and Research Material

**Description**

Anex, R. 2012 (on-going). Collaborations with DayCent developers at Colorado State University in an effort to improve model performance for our management systems.

**Product Type**

Data and Research Material

**Description**

Anex, R. 2012 (on-going). Collaborations with Dr. Michael Fienen of the USGS in using the PEST model-independent parameter estimation and uncertainty analysis program to calibrate the DayCent soil carbon model.

**Product Type**

Data and Research Material

**Description**

Anex, R. and M. Castellano.2012 (on-going).Multiple collaborations with Dr. Timothy Parkin of ARS NLAE, Ames, IA.

**Product Type**

Data and Research Material

**Description**

Anex, R. 2014 (on-going). Collaborations with Dr. David Wolfe with Cornell-led team regarding collaborative modeling analyses.

**Product Type**

Data and Research Material

**Description**

Gassman, P. and C. Kling.2013 (on-going). Collaborate with a number of scientists within context of NSF funded research in ongoing development of the SWAT modeling system for the UMRB and Ohio River basin, as well as other components of that modeling systems. These collaborations also impact the application of the modeling system for CSCAP. These scientists include Sergey Rabotyagov (Univ. of WA), Jeff Arnold and Mike White (USDA-ARS, Temple, TX), Raghavan Srinivasan (Texas A&M), and ManojJha (North Carolina A&T Univ.).

**Product Type**

Data and Research Material

**Description**

Gassman, P. and C. Kling.2012 (on-going). Collaborate with Carlos Tornquist (Federal Univ. of Rio Grande do Sul, southern Brazil) in our quest to test EPIC and DAYCENT with various datasets.

**Product Type**

Data and Research Material

**Description**

Gassman, P. and C. Kling. 2012 (on-going). Collaborate with César Izaurralde and Jimmy Williams in regards to our EPIC model applications.

**Product Type**

Other

**Description**

Frankenberger, J. 2014. Drainage water management in the corn belt. In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014. pp 14-15. [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

Strock, J. 2014. Proceedings of 5th soil and water management field day. Southwest Research and Outreach Center, University of Minnesota, Lamberton, MN. July 23, 2014.  
[http://swroc.cfans.umn.edu/prod/groups/cfans/@pub/@cfans/@swroc/documents/asset/cfans\\_asset\\_484298.pdf](http://swroc.cfans.umn.edu/prod/groups/cfans/@pub/@cfans/@swroc/documents/asset/cfans_asset_484298.pdf)

**Product Type**

Other

**Description**

Strock, J. and B. Dalzell. 2014 Understanding water needs of diverse, multi-year crop rotations." In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014. pp 18-19. [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

Castellano, M. 2014. Research shows soybeans provide consistent reduction in nitrous oxide emissions. In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014. pp38-39. [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

Bailey, B. and V. Davis. 2014. Investigating the impact of weeds and nitrogen on nitrous oxide emissions. In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014. pp33 [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

Abendroth, L.J. Benning, R. Elmore, B. Hartzler, M. Helmers, E. Hodgson, C. McGrath, D. Mueller, G. Munkvold, R. Pope, M.E. Rice, A. Robertson, J. Sawyer, K. Schaefer, A. Sisson, J. Tollefson and G. Tylka. 2013 Corn field guide, second edition." Iowa State University, Extension and Outreach. N/A <https://store.extension.iastate.edu/Product/Corn-Field-Guide-2nd-Edition>

**Product Type**

Other

**Description**

Wise, K. 2014. More IPM/Cover crop studies needed. In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014.pp41 [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

O'Neal, M. 2014. Cover crops shelter beneficial and harmful insects. In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014.pp41 [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

Eastburn, D. 2014. Cover crops shown to suppress soybean diseases. In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014.pp40 [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

Basso, B. and R. Nagelkirk. 2014. Predicting the impact of increasing temperatures on corn yield. In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014.pp10-11. [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

Arbuckle, J. 2014. Corn belt farmers are concerned, support adaptation action in the Ag community." In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014.pp21-22. [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

Arbuckle, J. and H. Rosman. 2014. Iowa farmers' nitrogen management practices and perspectives. Extension Report PM3066. Iowa State University Extension, Ames, IA. <https://store.extension.iastate.edu/Product/Iowa-Farmers-Nitrogen-Management-Practices-and-Perspectives>

**Product Type**

Other

**Description**

Arbuckle, J.G. and P. Lasley. 2013 Iowa farm and rural life poll: 2013 summary report. Extension Report PM3061. Iowa State University Extension, Ames, IA. <http://www.soc.iastate.edu/extension/ifrlp/PDF/PM3061.pdf>

**Product Type**

Other

**Description**

Morton, L., J. Hobbs, J. Arbuckle and A. Loy. 2014. Corn Belt farmers' adaptation to increased precipitation. In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014.pp24-25. [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

Today, D. 2014. Climate change impacts in the corn belt. In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014.pp8-9. [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

Abendroth, L. 2014. Corn growth and development: Climate matters. In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014.pp6-7. [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

Morton, L.W. 2014.Researching resilience: The sustainable corn project. In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014.pp5 [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

McGinity, M. 2014. Advice for young farmers. In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014.pp42 [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

Project. 2014. Corn Belt states create nutrient reduction strategies to address Gulf of Mexico hypoxia. In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014.pp12-13. [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

Laws, L. 2014. Cover crops produce benefits in wet and dry times. In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014.pp16-17. [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)



**Product Type**

Other

**Description**

Project. 2014. In-season N applications increasing in response to more frequent wet springs. In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014.pp34-35. [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

Laws, L. 2014. Learning from farmers. In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014.pp22 [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

Laws, L. 2014. Lifecycle benefits and costs of inorganic nitrogen fertilizer. In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014.pp31-32. [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

Laws, L. 2014. Scientists explore crop management options for storing soil carbon. In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014.pp27-28. [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

[http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

Project. 2014. Survey says: Engage farmers as problem solvers. In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014.pp23 [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

Laws, L. 2014. Winter rye cover cropping systems: A long-term investment. In: Resilient Agriculture. Cropping Systems Coordinated Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. Pub. No. CSCAP-0159-2014.pp36-37. [http://www.sustainablecorn.org/doc/MAG\\_REV\\_8-15-14.pdf](http://www.sustainablecorn.org/doc/MAG_REV_8-15-14.pdf)

**Product Type**

Other

**Description**

Sawyer, J.E., J. Pantoja and D. Barker. 2014. Corn and soybean production with a winter rye cover crop. Northeast Research and Demonstration Farm annual report ISRF. Iowa State University, Ames, IA.RFR-A13118.pp 13-13. <http://www.ag.iastate.edu/farms/2013/Northeast/CornSoybeanProduction.pdf>

**Product Type**

Other

**Description**

Sawyer, J.E., J. Pantoja and D. Barker. 2014. Corn and soybean production with a winter rye cover crop. Agricultural Engineering/Agronomy Research Farms annual report ISRF. Iowa State University, Ames, IA.RFR-A13118. pp 13-16. <http://www.ag.iastate.edu/farms/2013/aeareport/CornSoybeanProduction.pdf>

**Product Type**

Other

**Description**

Gonzalez-Ramirez, J., A. Valcu, C. Kling and P. Gassman. 2014. Cropland cash rental rates estimates and carbon supply curves for the upper Mississippi river basin: Final report. Report submitted to USDA-ERS.

**Product Type**

Other

**Description**

Loy, A., J. Hobbs, J.G. Arbuckle Jr., L. Wright Morton, L. Stalker Prokopy, T. Haigh, T. Knoot, C. Knutson, A. Saylor Mase, J. McGuire, J. Tyndall, and M. Widhalm. 2013. Farmer perspectives on agriculture and weather variability in the Corn Belt: A statistical atlas. CSCAP 0153-2013. Ames, IA: Cropping Systems Coordinated Agricultural Project (CAP): Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems. [http://www.sustainablecorn.org/What\\_Farmers\\_are\\_Saying/Farmer\\_Perspectives\\_on\\_Ag\\_and\\_Weather\\_Variability\\_Stat\\_Atlas.html](http://www.sustainablecorn.org/What_Farmers_are_Saying/Farmer_Perspectives_on_Ag_and_Weather_Variability_Stat_Atlas.html)

**Product Type**

Other

**Description**

Bidwell, M.D., C. Landry, D. McGranahan, J. Molnar, L. Wright Morton and M. Vasquez. 2014. Rural communities. 2014 National Climate Assessment.U.S. Global Change Research Program. <http://nca2014.globalchange.gov/report/sectors/rural-communities>

**Product Type**

Other

**Description**

Ingels, C. 2011+.The Hewitt Creek watershed website. <http://hewittcreek.wordpress.com/>

**Product Type**

Other

**Description**

Ingels, C. 2011+.The Lime Creek watershed website. <http://limecreekwatershed.wordpress.com/>

**Product Type**

Educational Aids or Curricula

**Description**

Frescoln, L., O.P. McCubbins and W. Miller. 2014. Climate change and agriculture. Summer workshop for high school science and agricultural science teachers, Iowa State University, Ames, IA. June 9-13, 2014.

**Product Type**

Educational Aids or Curricula

**Description**

Moore, R. 2014. Climate, agriculture, and sustainability in the corn belt: Focus on Lake Erie Watershed. Summer Course (ENR 5194). The Ohio State University Stone Laboratory, Aug. 3 - Aug. 9, 2014.

**Product Type**

Educational Aids or Curricula

**Description**

Strock, J. 2014. An introduction to greenhouse gas emission, specifically carbon dioxide, and the impacts of climate change on agriculture. Elementary/junior/senior high teachers training program conducted as a "proof-of-concept". June 9-12, June 24-26 and July 8-10, 2014.

**Product Type**

Audio or Video

**Description**

[Anonymous Press]. 2014 Iowa State University faculty contribute to national climate assessment. KTIC 840 Rural Radio, Rural Radio Network. Aug. 12, 2014.

**Product Type**

Audio or Video

**Description**

[Anonymous Press] (Lois Wright Morton cited). 2014 Iowa State University faculty contribute to national climate assessment. KNEB 960 Rural Radio, Rural Radio Network.

**Product Type**

Other

**Description**

[Anonymous Press] (Dennis Todey cited). 2014. Helping farmers adapt to changing growing conditions. Science Daily. Apr. 11, 2014. <http://www.sciencedaily.com/releases/2014/08/140811132257.htm>

**Changes/Problems**

{Nothing to report}